

Der feuerspeiende Berg Hecla auf Island / The Fire-spitting Mount Hecla in Iceland



Hecla lava

"Ehe dann die Berge geboren wurden, und die Erde Geburtsschmerzen hatte,
bist du Gott von Ewigkeit zu Ewigkeit."

(Buch Moses, 60. Psalm, Vers 2)

"Die Erde war von Anfang ganz eben erschaffen worden, hier wird sie nun als für
Geburtsschmerzen zitternd vorgestellt, da sie unter vielen Plagen, die Berge, ihre ältesten
Söhne gebahr. Wer weiß, ob nicht Moses hier in einem poetischen Kleide eine physikalische
Wahrheit vortragen will? Mir schwebt in Gedanken, als ob ich in einer orientalischen
Reisebeschreibung gefunden habe, daß ganze Völker sich eine ähnliche Vorstellung von der
Schöpfung machen."

(Uno von Troil 1779)

"Man hat wirklich Ursache, sich zu wundern, daß da jetzt sonst so viel Fleiß und so viele
Mühe auf die Kenntniß der Naturgeschichte verwandt wird, man doch bisher so wenige
Aufmerksamkeit auf die besonderen Wirkungen der Natur in Island gerichtet hat, daß man nur
eine sehr kleine Anzahl, der so häufig vorhandenen Feuerauswürfe in Island kennt, und weit
weniger von den noch ungewöhnlichern und fast unglaublich heißen springenden
Wasserquellen weis, woran das Land einen solchen Überfluß besitzt, anderer
ungewöhnlicher Naturbegebenheiten zu geschweigen."

(ebd.)

"This remarkable mountain has been long associated with the superstitions of the natives, to
which its awful phenomena give a great degree of countenance. The lower orders still regard
it with terror, and few of them have ever ventured to ascend its summit, or even to accompany
strangers as guides. Pits full of burning sulphur and mud, boiling springs, and openings
whence smoke and flames continually issue, are the more natural dangers by which they
endeavour to induce the travellers to forego is purpose; and when these prove vain, they relate
to him stories of the mountain-birds shaped like ravens, but with iron bills, which evil-entreat
all intruders on their domain. Its crater is the entrance of Hekla's dark abode, and in the
gloomy regions beneath the Icelanders have fixed "the place where the souls of wicked
persons are tormented with fire; for they will tell you that they see sometimes whole troops of
infernal spirits carrying the damn'd souls into the abyss of this mount, and returning back
again to fetch more. Blefkenius says, this is generally observed after some bloody battle has
been fought in some place or other." Though the intercourse with strangers may have
somewhat modified these superstitions in this vicinity, they are still found in all their force in
the remoter parts of the island."

(James Nicol 1840)

"I think it is one our most valuable remedies."

(T. S. Scales 1876)

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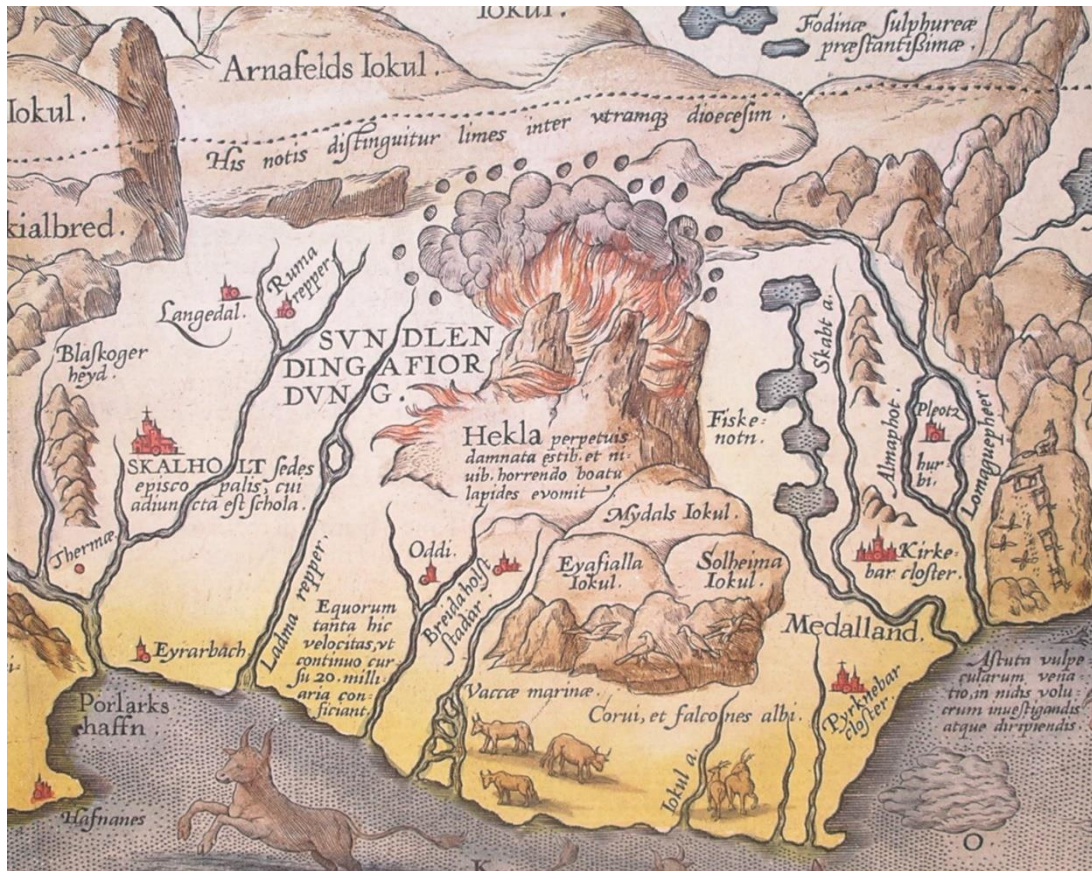
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Der Vulkan / The Volcano



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"**HEC´LA** or **HEKLA**, a volcanic mountain in Iceland, is of a conical shape, and stands isolated about 20 miles from the south-west coast. Its snow-clad summit is 5100 feet high. The principal crater, when visited by Sir George Mackenzie, was about 100 feet deep and contained a large quantity of snow in the bottom. There are many small secondary craters near the summit. The sides of the mountain are broken by numerous deep ravines, forming channels for mountain torrents that are produced by the melting of the snow. The principal rocks are lava and basalt, covered with the loose stones, scoriae, and ashes ejected from the volcano. The view from the summit is very desolate and wild. ´Fantastic groups of hills, craters, and lava, leading the eye to distant snow-covered jokuls; the mist rising from a waterfall; lakes embosomed amid bare bleak mountains; an awful and profound slumber; lowering clouds; marks all around of the furious action of the most destructive of the elements, give to the region a character of desolation scarcely be paralleled.´

A record of the eruptions has been kept since the tenth century. They are few in number, only 43, but they have always been violent and generally continuing for a considerable time. One of the most tremendous occurred in 1783, when the immense quantity of lava and ashes ejected laid waste a large extent of the country. The internal fire remained, as if exhausted, in a quiescent state till September 1845, when with terrific energy it again burst forth, and continued active for more than a year. At this time, it poured out a torrent of lava, which at the distance of two miles from the crater was one mile wide, and from 40 to 50 feet deep. A fine dust from this eruption was scattered over the Orkney Islands, a distance of 400 miles from Hecla."

(Chamber´s Encyclopaedia, A Dictionary of universal Knowledge for the People, vol. 5 (1863), p. 288)

Der feuerspeiende Berg Hekla auf Island

"Wenn man längs der Südküste Islands vorwärts geht, so biethet sich in einer beträchtlichen Entfernung von Skaaholt schon dieser Berg mit seinen drey Gipfeln dem Blicke dar. Seine Höhe über der Meeresfläche beträgt 5000 Fuß, oder gerade eine englische Meile. Er bildet kein Vorgebirge, sondern liegt gegen 4 englische Meilen landeinwärts. Er ist weder so hoch, noch so mahlerisch, als mehrere andere isländische Berge in seiner Umgegend; indessen ist er doch bekannter geworden, als manche andere Feuerspeier von gleichem Umfange, theils wegen seiner häufigen Ausbrüche, theils aber auch durch seine Lage, die ihn dem Blicke so

mancher Schiffer, die nach Grönland und Nordamerika segeln, aussetzt. Die Umgegend ist durch seine Ausbrüche so verwüstet worden, daß die Einwohner sie ganz verlassen haben.

Die Eingebornen behaupten, es sey unmöglich, den Berg zu besteigen, wegen der Menge gefährlicher Moräste, welche, wie sie sagen, beständig Schwefelflammen ausschicken und Rauchwolken ausdampfen, während der höhere Gipfel in der Mitte mit kochenden Quellen und weiten Kratern bedeckt sey, die unaufhörlich Feuer und Rauch ausstießen. Die südliche und westliche Umgegend zeigt die traurigsten Wirkungen häufiger Ausbrüche, indem der trefflichste Theil derselben unter Strömen geschmolzener Steine, Sand und Asche, und andern vulkanischen Massen vergraben liegt; indessen kann man zwischen den Windungen der Lava an verschiedenen Stellen doch noch Stücken von Wiesen, Mauern und verwüsteten Hecken bemerken. Noch größer ist die Verwüstung auf der Nord- und Ostseite, welche furchtbare Spuren der Verwüstung des Landes und des Unterganges seiner Bewohner aufweisen. Keine Pflanze, kein Gras ist in einer Strecke von zwey französischen Meilen rund um den Berg her zu bemerken; der Boden ist überall ganz mit Steinen und Lava bedeckt, und an manchen Stellen, wo später wieder unterirdisches Feuer ausbrach, oder wo Massen, die noch nicht ganz ausgeglüht waren, von neuem in Brand geriethen, hat das Feuer zur Bildung kleiner rother und schwarzer Hügel und Aufwürfe von Schlacken, Bimsstein und Asche beygetragen. Je meh man sich dem Berg naht, desto häufiger findet man diese Hügel, und unter ihnen trifft man auch welche, deren Spitzen eine runde Öffnung haben, die das unterirdische Feuer durch Auswerfen der Masse bildete. Am Fuße des Hekla wird der Boden unwegsam, besonders in der Nähe der größeren, vom Berge ausgeworfenen Lavaströme.

Rund um den Berg befindet sich ein aus verschmolzenen großen Steinen bestehender Lavahügel von 40 bis 70 Fuß Höhe, in Gestalt einer Brustwehr oder eines Walles. Diese Steine haben sich wieder gelöset, und sind meistens übermoost, während sich zwischen denselben tiefe Höhlungen zeigen, so, daß das Ersteigen, besonders an der Westseite, große Vorsicht erfordert. Die ganz in Bimsstein verwandelten Felsstücke sind in dünnen horizontalen Lagen umhergestreut, und nach jeder Richtung zerbrochen, woraus man sich einen Begriff von der Heftigkeit des Feuers machen kann, das auf sie gewirkt hat.

Sir Joseph Banks, Dr. Solander, Dr. James Lind von Edinburgh und Dr. Von Troil, ein Schwede, waren die ersten Reisenden, welche den Gipfel des Berges Hekla bestiegen. Es geschah im Jahre 1772, und ihr Unternehmen wurde durch einen vorher, im Jahre 1766, Statt gehabten Ausbruch, der die Steile und Schwierigkeit des Aufstiegs vermindert hatte, sehr erleichtert. Als sie in Island an´s Land stiegen, fanden sie zuerst eine Strecke Landes, 60 bis 70 Meilen groß, von Lava, die in einem Zustande vollständiger Flüssigkeit gewesen zu seyn schien, gänzlich verwüstet."

(Neue 114 Weltwunder, Naturgeheimnisse und außerordentliche Erfahrungen auf und unter der Erde, Pesth und Halberstadt (1831), Der feuerspeiende Berg Hekla auf Island, S. 1-3)

Von den feuerspeyenden Bergen in Island

"Man hat wirklich Ursache, sich zu wundern, daß da jetzt sonst so viel Fleiß und so viele Mühe auf die Kenntniß der Naturgeschichte verwandt wird, man doch bisher so wenige Aufmerksamkeit auf die besonderen Wirkungen der Natur in Island gerichtet hat, daß man nur eine sehr kleine Anzahl, der so häufig vorhandenen Feuerauswürfe in Island kennt, und weit weniger von den noch ungewöhnlichern und fast ungläublich heißen springenden Wasserquellen weis, woran das Land einen solchen Überfluß besitzt, anderer ungewöhnlicher Naturbegebenheiten zu geschweigen." (...)

"Ich mag es hier nicht zu bestimmen, ob die Gedanken einiger Gelehrten, daß alle Berge entweder durch Wasser oder durch Feuer entstanden sind, gegründet seyn oder nicht. Denn so wahrscheinlich auch diese Meynung ist, wovon wir sogar in den ältesten Zeiten und bey den ältesten Schriftstellern Spuren finden; so wird es doch schwer, wo nicht unmöglich seyn, sie durch Erfahrung auszumachen. Dem sey wie es wolle; so wage ich es doch zu behaupten, daß Island durch Feuerauswürfe entstanden sey.

Es ist gar keine ungewöhnliche Begebenheit, daß auf die Art Inseln hervorkommen. Wir haben viele Exempel davon; nur möge die Annehmung dieser Hypothese, die Größe und Ausdehnung Islands in Vergleichung mit andern auf die Art hervorgebrachten Inseln, einigen Zweifel verursachen. Ich kann es auch nicht läugnen, daß dies sowohl, als auch einige dort gefundene Steinarten, woran man keine deutliche Spuren von der Wirkung eines Feuers bemerkt, allerhand Bedenklichkeiten erregen können. Wenn ich aber dagegen sehe, daß der Grund an allen Orten, wohin man auf Island kommen kann, und besonders an den Ufern aus Lava oder Tuffstein besteht, die oft mit einer andern Steinart, wie bey Lundö, ja mit einem harten Graustein, oder mit mehrern Schichten von verschiedenen Erd- und Steinarten bedeckt sind, wie bey Laugarnaes, wo man eine 14 Fuß dicke Lava findet; wenn ich überdem finde, daß die Felsen, die keine deutliche Spuren vom Brande an sich haben, aus zusammen gebacktem Sande, der mit kleinen Stückchen Spat vermischt ist, bestehen, welcher innerhalb zwey bis drey, ja mehrern Tausend Jahren, seitdem die Lava den Grund gelegt hat, leicht erzeugt seyn kann; so finde ich nichts, was mich hindern könnte, Island für eine Geburt des Feuers zu halten.

Desfalls aber bin ich keineswegen der Meynung, daß diese ganze Insel auf einmal durch das Feuer hervorgebracht sey; sondern ich halte vielmehr dafür, daß das Feuer viele Jahrhunderte daran gearbeitet habe, daß bald eine, bald die andere Klippe dadurch erzeugt worden, deren Spitzen durch einen neuen Ausbruch des Feuers vereinigt worden, und auf welche diese ganze große Insel hernach gleichsam als auf ihre Grundpfeiler zu liegen gekommen sey.

Freilich ist es schwer, mit Gewißheit auszumachen, ob diese Vermuthung wahr sey oder nicht; indessen dünkt mir doch, daß ich alle Anleitung dazu habe, sowohl aus der gewölbten Figur, welche die Lavaströme mehrentheils angenommen haben, als aus dem wahrscheinlichen Zusammenhange des Meers mit vielen der dort befindlichen feuerspeyenden Berge. Ich glaube auch, daß dadurch das Versinken einiger Inseln, davon man bey großen Erdbeben bisweilen Exempel hat, am besten erklärt werden könne; da eine Gebäude am ersten über den Haufen fällt, wenn man die Pfeiler, worauf es ruhet, hinwegreißt.

Ich gehe also in Absicht auf die Feuerauswürfe in Island, weiter zurück als die alte Sage unter den einfältigsten Haufen des dortigen Volks, welche glauben, daß da die ersten Einwohner, die man für Christen und Irrländer hält, von den Norwegischen Colonisten so gedrängt wurden, daß sie das Land verlassen mußten; sie aus Verdruß es vorhero in Feuer gesetzt hätten. Wir können doch nicht eher als nach Ankunft der Norweger, daselbst sagen, wann oder wie oft dort Feuer ausgeworfen worden. Diese aber haben alles, was sie und ihren neuen Wohnplatz anbetraf, mit vielem Fleiß aufgezeichnet.

Der erste Feuerauswurf, dessen die alten Nachrichten gedenken, ist der Ildborgar hraun, gleich nach Ankunft der Norweger im neunten Seculo auf der Westseite der Insel. Seiner wird aber gar nicht als etwas ungewöhnliches oder außerordentliches gedacht, sondern es wird bloß gesagt, daß das Feuer bey einem dem Thore gehörigen Hofe Hrip hervorgebrochen sey, und eine Lavastrecke oder ein Hraun von 3 Meilen in die Länge, und zwo eine halbe in der Breite, ist noch bis jetzt ein Denkmal desselben. Nach der Zeit wird keines Feuerausbruches gedacht,

als im Jahr 1000, wo die christliche Religion in Island eingeführt ward. Zu einer Zeit als die Vornehmsten des Landes versammelt waren, sich wegen Annehmung der christlichen Religion zu berathschlagen, kam die Nachricht, daß zu Olves Feuer ausgeworfen würde. Die Heyden sahen solches als einen Beweis von dem Zorn ihrer Götter an, und wollten sich daher zur Annahme des Christenthums nicht bereden lassen; Snorre Gode aber antwortete ihnen, indem er sie frug: auf wen zürnten denn die Götter damals, als die Klippen brannten, worauf sie nun stehen.

Nach diesem Brande gedenken die Isländischen Jahrbücher 63 Ausbrüche des Feuers: vom ersten Ausbruche der Heckla im Jahr 1004 bis zum Ausbruch des Heckla im Jahr 1766. (*) Wenn man in einem Zeitraum von 800 Jahren so viele Feuerauswürfe an verschiedenen Orten bemerkt findet; so ist es schwer zu begreifen, wie Horrebow, der selbst im Lande gewesen ist, versichern kann, daß dort nur an sehr wenigen Stellen Feuer ausgeworfen worden.

Man darf nur die schrecklichen Wirkungen des Feuers zu erkennen, das Land selbst ansehen. Die Berge desselben bestehen fast überall aus Lava und Tuffstein, und die Ebenen sind mit kraun oder Lavastrecken überzogen, welche doch an vielen Orten mit Erde und Torf bedeckt sind. Die Nachrichten welche wir von gewissen Feuerausbrüchen haben, lehren uns auch, daß dadurch mehr oder weniger, mehrentheils aber ansehnliche Stücken des Landes verwüstet worden.

Ich will hier nicht des Schadens gedenken, welche den Einwohnern durch die aus den feurspeyenden Bergen geworfene Asche zugefüget worden, die oft zwanzig bis dreyßig Meilen in die Länge, über eine halbe Elle ja höher die Wiesen bedeckt, wodurch das Vieh nicht wenig gelitten, und welches auf solches die Würkung gehabt hat, daß es theils die Zähne verlohren, theils aus Mangel an Futter gestürzt ist. Bisweilen hat man, wenn es geschlachtet ward, in den Eigenweiden und der Leber desselben Bimssteine gefunden. Ich will nur blos einige der den feurspeyenden Bergen am nächsten gelegenen Oerter und Gegenden nennen, die durch die Gewalt derselben bis auf den Grund verwüstet sind. Dies geschah, theils durch heftige Erdbeben, welche mehrentheils vor den Feuerauswürfen vorhergehen und solche ankündigen, theils durch eine Wasserfluth von den durchs Feuer geschmolzenen Eisbergen, theils durch die Menge glühender Asche und Steine, die aus der Öffnung des Vulkans herausgeworfen worden, theils endlich durch Ströhme einer brennenden Materie, die allenthalben an dessen Seiten herausfloß.

Im J. 1311 brannten bey Roidekamb elf Höfe ab, eben so viele bey Trolledyngr, und i. J. 1366, siebzig bey Lillehered. Heckla verstörte 1374 zwo, 1390 sieben, und 1436 in einem Tage achtzehn Höfe. Eben so wurden 1660 bey Myrdals Jökul fünf, und 1693 bey Heckla weit mehr Höfe ruinirt. 1727 wurden bey Myrdals Jökul wenigsten 600 Schafe und 150 Pferde theils von der Fluth theils von den damit herabstürzenden Eisstücken getödtet. 1728 wurden bey Krafle viele Höfe verstört, ein großer See, Myvatn, ward ganz ausgetrocknet, und die von den Bergen sich herabwälzende Feuerströme flossen von einem Jahr ins andere hinein, und machten eine Lavastrecke von vier Meilen in die Länge und anderthalb in die Breite. Im J. 1755 verwüstete der Kattlegian sechs Kirchspiele, und eben so verheerte der Heckla bey dem letzten Auswurf viele Meilen in Nordosten.

Man darf also wohl nicht zweifeln, daß das Feuer hier mit gleicher wo nicht mehrerer Wuth rase als beym Vesuv, Aetna und anderen Vulkanen; aber dem ungeachtet sehe ich nicht ein, was einige für Grund gehabt haben zu behaupten, daß zwischen den feurspeyenden Bergen in Island und Italien einige Gemeinschaft seyn soll. Mit gleichem Grunde könnte man auch behaupten, daß Kattlegiaa und Teneriffa, Krafle und Lima miteinander Gemeinschaft hätten.

Doch ehe ich diese fürchterlichen Wirkungen des Feuers verlasse, muß ich noch eines Umstandes gedenken, wovon sowohl Eggert Olaffsen als Jacobsen redet. Als der Kattlegiaa das letztemal Feuer auswarf, brach gleichsam ein Blitz aus der Flamme hervor, welcher die im Wege stehenden Klippen durchbohrte. Eben derselbe tödtete an einem Ort elf Pferde, wovon drey im Stall standen. Ein Bauer ward davon dichte vor seiner Stubenthür erschlagen. Dessen Oberkleider, welche von Wolle waren, blieben völlig unversehrt; aber das Hemde und der Brusttuch, die von Leinen waren, wurden verbrannt, und als man ihm die Kleider abzog, war an der rechten Seite Haut und Fleisch bis auf die Knochen verbrannt. Die Magd, welche ihm das Vieh retten helfen sollte, ward auch vom Blitz getroffen, starb aber erst einige Tage nachher und mußte unbeschreiblich viel ausstehen. Man sagt, daß als man ihr andere Kleider angezogen, auch solche von dem an ihren Leib gleichsam klebenden zähen Feuer versengt seyn. Ich hatte anfänglich Bedenken, dies für wahr zu halten. Wenn ich aber in ihrer Weltbeschreibung lese, daß Braccini schon bemerkt hat, daß sich aus dem Vesuv im Jahre 1631 ein Rauchsäule einige Meilen weit über das Land erstreckt habe, woraus tödtende Blitze gefahren, daß eben dergleichen im Jahre 1767 geschehen seyn soll, und daß wenn der Vesuv Feuer gespyen, die in Neapel aufgerichteten eisernen Stangen elektrisch geworden sind; so bekommt der Gedanke eine mehrere Gewißheit, daß in diesem Feuer etwas elektrisches sey, da sich gleiche Phönomena bey dem Gewitter zeigen." (...)

"Selten oder fast nie geschieht es, daß die Berge unvermuthet anfangen, Feuer auszuwerfen. Ausser einem starken Getöse, Gesause und Krachen in der Gegend daherum wo das Feuer ausbrechen wird, gehen auch gemeinglich eine Menge allerhand feuriger Luftzeichen wie auch starke Erdbeben vorher, von welchen die Landesgeschichte viele schreckliche Exempel anführt.

Unter den Spuren, die solche Feuerausbrüche hinterlassen, sind besonders die Risse die man häufig findet, und worunter der größte Almenegiaa beym Wasser bey Tingvalla ist. Er ist sehr lang und 105 Fuß breit. Die Spalte selbst geht von Norden nach Süden, und ist die Wand nach Westen zu, wovon die andere perpendiculair getrennt worden, 107 Fuß 6 Zoll hoch, und besteht aus vielen Schichten, deren jede etwa eine Höhe von zehn Zoll hat, von zu verschiedenenmalen kalt gewordener Lava, die man deutlich aus der obersten Rinde derselben sieht, welche voller Blasen, etwas brauner an Farbe und nicht so zusammengedrückt als die übrige Massa der Lava ist. Die Wand nach Osten ist höchstens 45 Fuß 4 Zoll, und der Theil derselben, welcher gerade gegen die größte Höhe auf der andern Seite über ist, nur 36 Fuß 5 Zoll hoch.

Man sieht es auch als ein Anzeichen eines bevorstehenden Brandes an, wenn kleine Seen, Bäche und Ströme austrocknen. Zur Beschleunigung des Ausbruchs des Feuers glauben einige, trage nicht wenig bey, wenn der Berg so mit Eis bedeckt wird, daß die Löcher, wodurch die Dünste sonst ihren freyen Ausgang gehabt haben, verstopft werden. Ob ich nun zwar nicht der Meynung bin, daß dies eben sonderlich viel dazu beytrage, so ist doch gewiß, daß das Feuer mehrentheils in solche mit Eis bedeckte Berge, oder wie sie dort im Lande heißen, Jökul, seinen Aufenthalt hat.

Das erste, was man bey einem neuen Feuerauswurf gemeinglich wahrnimmt, ist das Zerspringen des Eisberges, welches mit großen Krachen geschieht, daher es auch auf Isländisch, Jökla-hliod (Jökuls-Ton) und Jökla brestar genannt wird.

Darauf brechen Flammen heraus, und mit dem Rauch dringen Blitze und Feuerkugeln hervor, welche oft sehr weit gehen. In den Flammen spielet eine Menge größerer und kleinerer Steine,

welche oft unglaublich weit weggeworfen werden. Ich habe selbst bey Näsverholt, etwa eine Meile vom Heckla einen runden Stein, der eine Elle im Durchschnitt hatte, gesehen, welcher wie der Heckla das letztmal Feuer spye, dahin geworden worden, und Eggert Olaffsen erzählt, daß bei dem letzten Auswurf des Kattlegiaa ein Stein, der 14 ½ Lispf. gewogen, vier Meilen weit geworfen sey.

Ferner wird eine Menge weißer Bimsstein mit dem fließenden Wasser ausgeworfen, und man glaubt um so mehr, daß letzteres aus dem Meer komme, da man, wenn das Feuer aufhört, nach einigen Feuerauswürfen viel Salz gefunden hat, daß man viele Pferde damit beladen können.

Darauf folgt gemeinlich Hraun oder Lava und schwarzer Bimsstein, und zuletzt Sand und Asche.

Nahe bey den Öffnungen findet man selten Lava, sondern mehrentheils Tuff, oder lose Asche und Gries, und besteht der größte Theil der Isländischen Berge aus dieser Materie, die mehrentheils, wenn sie kalt geworden, eine etwas gewölbte Figur angenommen hat, wovon man in dem Riß bei Almann egiaa einige fürtreffliche Proben sieht. Die obere Rinde wird bisweilen kalt und fest, obgleich die geschmolzene Materie noch unter derselben wegläuft, dadurch entstehen große Höhlen, deren Wände, Bette und Dach aus Lava besteht, und wo man eine Menge Tropfstein aus Lava findet.

Man findet in Island dergleichen Höhlen in ungewöhnlicher Menge und von seltner Größe,; und bedienen sich die Einwohner ihrer an einigen Orten zu Schafställen. Ich will hier nur blos der Surthellir Höhle, als der größten unter allen gedenken. Sie ist 34 bis 36 Fuß hoch, 50 bis 54 Fuß breit und 5034 Fuß lang.

Es würde sehr weitläufig und dabey sehr schwer seyn, alle und jede Producte des Feuers hier anzuführen, da es eine so große Menge von Steinarten giebt, von den man nicht weis, ob sie mit dahin gehören oder nicht, als z. E. Jaspis, den man in großer Menge, sowohl von schwarzer als rother Farbe in der Lava eingeschlossen und damit vermischt findet. Ich will also blos diejenigen nennen, welche offenbar durch das Feuer entstanden sind.

1. Tuff, ein zusammengebackter Stein aus Asche und Gries, worinn man bald Lava, bald Basalt und bisweilen andere Steinarten gemischt findet, welcher mit dem ausgesprützten Wasser angefeuchtet und durch die Wärme und der Zeit hart geworden ist.

2. Lava ist durch die Heftigkeit des Feuers geschmolzene Steinart, welche nach ihrer verschiedenen Beschaffenheit, wenn sie dem Feuer zur Nahrung dienete, auch sehr verschieden ist. Man findet die Lava bisweilen ganz fest, bisweilen porös und voller Blasen und Löcher, inwendig ist sie allezeit mit brüchigen bleichweißen und undurchsichtigen Quarzkrystallen oder mit grünen Glastropfen angefüllt, welche, wenn sie lange an der freyen Luft liegen, so wie anderes Glas verwittern. An Farbe ist die Lava schwarz, dunkelblau, violett, braunroth und gelblicht, am meisten aber schwarz und roth. Wo das Feuer stark gespielt hat, ist sie wie glasirt, und sieht fast aus als Harz. Bey den Hraunen oder großen Lavastrecken findet man, daß sich die Rinde bisweilen beim Kaltwerden in Falten, größtentheils aber wie ein Schiffsseil oder Tau angelegt hat, und zwar manchmal der Länge nach, manchmal aber in einem Cirkel herum, wie ein zusammengewickeltes Kabeltau, und zwar so, daß die Dicke desselben immer vom Mittelpunct bis zur Perypherie zunimmt. Ich muß auch eine feste schwarze Materie mit hierher rechnen, die gegen Stahl Feuer schlägt. Da solche bisweilen die Figur von Bäumen und Zweigen annimmt; so sind einige auf den Gedanken verfallen, solche für petrificirte Bäume zu halten; ich mögte sie lieber für einen wahren Jaspis ansehen.

3. Bimsstein, sowohl weißen, der wahrscheinlicher Weise von dem siedenden Wasser ausgezogen worden, als schwarzen und rothen.

4. Agat, ich behalte diesen angenommenen Namen bey, ob es gleich wirklich nichts anders ist als gebranntes Glas. Man findet ihn weiß, durchscheinend und fast crystallförmig an einigen wenigen Stellen, der blaulichte ist auch selten, aber man findet ihn in großen Stücken; der mehreste ist schwarz, wird auf Isländisch *hrafn-tinna* genannt, und fällt theils in Lagen, theils in Drusen, theils beynahe crystallförmig in ovalen, vier bis fünfeckigten Figuren. Dieses schwarze Glas hat Hr. Observator Einar Jonsen, sowohl in Kopenhagen als auf Island in seinen Tuben, bey Beobachtung der Sonne, statt des sonst angelaufenen Glases gebraucht und es dazu weit besser gefunden. Der grüne Agat fällt etwas gröber und mehr röhrigt, gleicht dickem Bouteillen-Glas, und wird *hraftinnu-broder* genannt.

Den Schwefel kann man als die eigentliche Nahrung des Feuers ansehen. Er wird häufig, sowohl gediegen als mineralisirt; am meisten aber zu Husevick in Nordisland, zu Krysevik in Südisland gefunden. Man hat ganze Schwefelminen oder Gruben, die Namar heißen. Von den Basalten werde ich in einem besonderen Briefe reden."

(Briefe welche eine von Herrn Dr. Uno von Troil im Jahr 1772 nach Island angestellte Reise betreffen, Upsala und Leipzig (1779), Achtzehnter Brief, S. 210-222; Neunzehnter Brief, S. 223-228)

[^(*) Liste der Vulkanausbrüche von 1004-1666 S. 216-218]

Eggert Olaffsens und Biarne Povelsens Reise nach den waßer- und feuerspeyenden Eisbergen

"Im Jahr 1756 hatten wir uns vorgesetzt, diese Art Berge zu besehen, wovon Island einige aufweisen kann, die wohl nicht ihres gleichen haben. Die Veranlassung dazu gab der Katlegiaa, der das vorige Jahr hindurch und noch ab und an in diesem Jahre dergleichen Ausbrüche zeigte. Der Weg gieng also zuerst nach diesem Eisberge, der dem Südlände am nächsten war, und den wir von dieser Seite bis hinauf an Trichter zu ersteigen hofften. Ehe wir die Reise selbst erzehlen, wollen wir von diesem Feuerausbruche eine kurze Beschreibung geben, ihre Vorboten, eigentliche Beschaffenheit nebst ihren Folgen und Wirkungen zeigen, so wie wir solches zuvor in dem darüber an die Societät abgestattetem Berichte, der auch bereits im Druck erschienen ist, gethan haben.

In der Beschreibung des Nordlandes haben wir schon des Erdbebens gedacht, welches wahrscheinlicher Weise von den unterirdischen Bewegungen des Myrdals-Jökuls veranlassen wurde. Kurz nachdem Island war bewohnt worden, um 900, führte dieser Jökul schon das erste betrübte Schauspiel auf, welches er seit der Zeit fünfmal wiederholt hat. Vor dem letzten giengen keine Vorboten vorher, außer daß aus dem Jökul im Sommer zwey neue Ströme entsprungen, welche die durch Myrdals-Sand Reisenden passiren mußten. Niemand vermuthete aber deswegen einen Feuerausbruch, ob es gleich ein sicheres Zeichen von der zunehmenden Hitze im Berge war, die solchergestalt das Eis auflösete. Hat das Feuer nun solchergestalt das Eis in etwas geöffnet, so erfolget darauf gerne ein Erdbeben, indem das Waßer in die unterirdischen Feuerbehältnisse hinabstürzt, die nicht allein in der Tiefe des Berges liegen, sondern sich auch in weit entlegene Gegenden, insbesondere solche, die ehemals gebrannt haben, erstrecken. Diese sind nämlich sehr porös und dienen also den verborgenen obgleich sehr entfernten Behältnissen zu Luftlöchern.

Den 17. October 1755 des Vormittags um 10 Uhr vernahm man im Myrdal sehr geschwinde und unordentliche Erschütterungen, wodurch die Häuser beschädiget wurden. Dieses Erdbeben wurde durch die Ergießung des vorher vom Feuer geschmolzenen Waßers in den Schlund verursacht, allein das Feuer behielt die Oberhand, wurde nur um so viel stärker, und

thauete alles auf dem Berge befindliche Eis auf. Denn bald darauf ergoß sich das daraus entstandene Waßer in drey Arme gegen Südost und gegen Westen von dem Katlegia herab, und überschwemmte die ganze Lava-Gegend, Myrdals-Sand 5 Meilen lang und 4 Meilen breit von Norden zum Süden oder von dem Jökul ab bis an die See. Diese Ströme führten eine unglaubliche Menge Eisberge, und unendlich viel kleinere Eisstücke, wovon eins das andere fortstieß, in die See. In dem Eiße saßen Felsstücke von der Größe eines Hauses fest, und das Waßer war überdem angefüllt mit schwarzem Bimstein, Schwefelerde und Asche. Die Einwohner wußten des Erdbebens wegen weder wohin noch woher, als sie aber einen starken Knall vom Jökul her hörten, sahen sie dahin, und wurden gewahr, wie aus drey Öffnungen nahe bey einander, Feuer und Waßer wechselweise mit einem solchen Krachen ausgeworfen wurde, daß man den Untergang des ganzen Landes befürchtete. Hierauf erfolgte nun die vorher beschriebene Waßer- und Eisflut. Zuerst sahen sie eine schwarze dicke Rauchwolke aufsteigen, und hierauf fiel ein dicker Hagel von Steinen. Mittlerweile dauerte das Erdbeben fort, doch mit dem Unterschiede, daß die Erschütterungen langsamer auf einander folgten und mit einem ungewöhnlichen Sausen begleitet waren. Die mit dem Steinhagel ausgeworfene Steine waren alle glühend und von zweyerley Art, erstlich Bimsteine, wovon einige 2 bis 3 Pfund wogen, und zweytens eine hellblaue, graue, sehr harte und schwere Steinart. Die Feuer- und Waßerauswürfe des Berges waren nachher zwar weniger ordentlich, aber wohl so heftig. Zuweilen wurden große helle Feuerkugeln hoch in die Luft geworfen, die alsdenn in unzählbaren Stücken, zersprangen und in den entferntesten Gegenden gesehen wurden. Auf den Feuerausbruch und den Steinhagel folgte ein wirklicher Hagel, der sich von dem gewöhnlichen darin unterschied, daß in jeder Eiskugel etwas Sand oder Asche eingeschlossen war, wovon die Luft damals voll war. Alles dieses geschah den ersten Tag. Die folgende Nacht zeigte der Jökul ein eben so seltenes als schreckliches Feuerwerk. Nicht allein die Spitze des Berges, sondern der ganze Himmel war voll Feuer und Flammen, und überall, insbesondere wenn die blitzähnlichen Kugeln zersprangen, war es so hell, als am Tage. Dieser Blitz und die Funken der Kugeln erstreckten sich auch auf andere Bygden, als auf die in Myrdal. Beständig stand über dem Berge eine Feuersäule, die allerhand Gestalten und Farben zeigte, und dabey hörte man stets ein Brausen und Krachen, und häufiges Knallen, wie von dem größten Geschütz. Die Luft war überdem mit einem unerträglichen Schwefelgeruch angefüllt, der nebst der feinen Asche in Nase und Mund drang und auf die Brust fiel. Die armen Einwohner wurden solchergestalt durch alle aufgebrauchte Elemente angegriffen und es war ihnen nicht zu verdenken, wenn sie das Ende der Welt nahe glaubten.

Den 18ten war der Berg stille und ein dicker Nebel nebst Regen bedeckte ihn und die ganze Gegend. Man hörte eben das unterirdische Brausen nebst dem Krachen im Berge, wie vorher, mit Erdbeben begleitet. Die folgende Nacht war das Feuerwerk wiederum angezündet. Den 19ten wehete ein Nordwestwind und im Myrdal hatte man klares Wetter, so daß man die Rauchsäule voll rother Funken über dem Berge sahe, die die folgende Nacht alles erhellte; an der Ostseite von Myrdal war es dahingegen Tag und Nacht finster, und schwarzer Sand und Asche fielen über alle Herrede von Ost-Island. Das Knallen war an diesem Tage oftmals so stark, daß man es im Südlande, im Guldring- und Kiosarsyssel 25 bis 30 Meilen weit von hier hörte; und denselben Tag fiel die Asche auf Färöe. Den 20sten war der Wind sowohl als das Rasen des Eisberges, wie den Tag vorher; und der Knall zweyer herausgeworfener Feuerkugeln war stärker als man ihn zuvor gehört hatte. Den 21sten wurde der Wind Nordost, da also die Finsterniß und der Aschnebel auch in Myrdal sich einstellten. Die Finsterniß dauerte die Nacht und den folgenden Tag, wobey die größte Menge Asche in diese Gegend fiel; die Bewegungen des Berges und der Luft legten sich aber in etwas. Die Nacht nach dem 21sten sahen wir auf unserer Reise von der Insel Viidey den Feuerspeyenden Berg: man sahe hier über die Gebirge weg, nicht allein die Feuersäule, sondern auch die in der Luft zerspringenden Kugeln. Den 23sten und folgende Tage, bis an den 28sten war der Wind

nordöstlich, womit eine dicke Finsterniß und ein starker Ashregen folgte, der sich auch bis auf die südliche Herrede erstreckte. Den 27sten wurde der Schnee auf der Insel Viidey davon schwarz. Zwischen durch vernahm man noch langsame starke Erschütterungen, welche mit großen Waßer- und Feuerergießungen begleitet wurden. In der Nähe des Berges fielen Bimbsteinsand, Steine und Staub 3 bis 4 Fuß hoch. Von dem 28 bis zu dem 7ten November hatte man stilles Wetter mit Regen und dicke Luft, so daß man das Feuerspeyen des Berges nicht sehen konnte, und nur zuweilen den Schall davon in der Luft vernahm. Die Erderschütterungen wurden von Tag zu Tag seltener und man bemerkte, den 17ten November ausgenommen, keine Feuer- und Waßerergießungen, die was zu bedeuten hatten. In dem folgenden 1756sten Jahr vernahm man solche zu 5 verschiedenenmalen, nämlich den 15ten Januar, den 28sten und 29sten Junii, den 12ten August und zuletzt den 25sten eben dieses Monats; ausgenommen das, was wir den 18ten December bey unserer Rückreise vermutheten. Der Ausbruch den 12ten August war an diesem und dem folgenden Tage mit einer dicken Finsterniß, einem Aschregen und Steinhagel verbunden, so daß die Einwohner aufs Neue in Angst und Schrecken gesetzt wurden. Den 25sten September des Morgens um 6 Uhr fieng der Berg bei hellem Sonnenschein an Feuer zu speyen, legte sich aber nach Verlauf einer Stunde wieder.

Die Wirkungen dieser Ausbrüche des Katlegiaa waren folgende:

- a) Die Verwüstung der Bygde sowohl durch die Waßerfluthen, als vornämlich durch die Bedeckung mit Asche, Sand und Steinen, welche alle Hölzungen und andere Gewächse begruben. Gegen 50 Bauernhöfe mußten ganz verlassen werden und alle Felder des Sysseles, insbesondere des westlichen Theils davon, und namentlich des schönen Kirchspiels Skaptaatungr, wurden ganz verwüstet. Auf den Ebenen lag der Sand 1 bis 2 Fuß hoch, in den Thälern aber, um die Höfe und die Einhägungen der Felder herum 4 bis 6 Fuß hoch.
- b) Die Gegend unter dem Eisberge, nämlich Sand und die davor gelegende Seeküste, tragen noch die Merkmale von der unglaublichen Kraft, womit diese Ausbrüche geschahen, an sich. Die ganze Seite des Gebirges weiset insbesondere auf eine Länge von 2 Meilen viele nahe an einander stehende neue Berge und große Klippen, welche das Feuer ausgeworfen und das Waßer fortgeführt hat. Längs dem Myrdalssande sahe man, als Wirkungen dieses Ausbruches, 3 parallel laufende Bergrücken, deren jeder Anfangs 60 Ellen hoch war und die zusammen eine halbe Meile breit waren. Sie bestunden aus Stein und Eisklippen, mit Bimbstein, Sand und Asche vermischt, erstreckten sich so weit man sehen konnte, nämlich gegen 3 Meilen, in die See hinein und ragten noch auf dieser ganzen Weite, wovon die Schiffer versicherten, daß sie 40 Faden tiefes Waßer habe, über der Meeresfläche hervor.
- c) Die Einwohner, wovon doch zur größten Verwunderung nur 2 Personen ums Leben kamen, wurden alle in das größte Elend versetzt. Den Tag, da der Berg losbrach, reiseten viele über diese sonderbare Gegend, und obgleich die Waßerfluth alle Creaturen auf dem Felde wegnahm, kam doch hierdurch kein Mensch um. Einige waren schon vorüber und andere retteten sich und ihre Pferde entweder auf Hahfurs-Oee, einem einzelnen Berg in Myrdalssand, der vermuthlich ehemals eine Insel gewesen, oder auf andere Hügel. Allein diese Menschen mußten 7 Tage lang unter Feuer, Kälte, Regen und Steinhagel ohne Essen und Trinken aushalten, bis sie sich endlich mit großer Noth auswagten, ihre Pferde auf der Seite liegend über dem Eise wegschleppten und solchergestalt das Kirchdorf Höfdebroke in Myrdal erreichten. Den 7ten November, da die Waßerfluth sich etwas verlaufen hatte, versuchte eine Gesellschaft von 18 Personen über Myrdalssand zu kommen, konnte aber vor zusammengehäuften Eisschollen nirgens anders als an dem äußersten Rande der Seeküste durchkommen. Alles Trinkwaßer wurde von der angesteckten Luft verdorben, und der Schwefelgestank war so hefftig, daß die Menschen fast erstickten. Die Brust wurde sehr angegriffen, aller Geruch und Geschmack war ihnen benommen, die Augen wurden roth, die Augenlieder schwellen auf und an dem Zahnfleische setzten sich Beulen, welche zuletzt

durchbrachen. Sie verlohren von ihrem Vieh, außerdem was die Waßerfluth schon weggenommen hatte, noch eine Menge; es wurde von den beständigen Feuerfunken und dem Steinhagel wie rasend und lief so lang umher, bis es todt zur Erde fiel; das Übrigbleibende wurde vom Hunger ganz abgezehret, indem ihm die Zähne durch den Sand verdorben waren und die Erde kein Gras für sie hatte. Das Schlimmste hierbey war noch, daß nicht allein der Wintervorrath fürs Vieh, sondern auch die Eßwaaren der Einwohner durch die sehr feine Asche verdorben wurden, die überall in die Häuser eindrang.

d) Der Blitz der vom Katlegiaa herab fuhr, hatte in seinen Wirkungen etwas ganz besonderes. Elf Pferde, wovon 3 nebeneinander auf dem Stall stunden, wurden davon erschlagen. Zwey Menschen wurde gleichfalls tödtlich davon getroffen und zwar auf folgende Weise: den einen, einen ehrbaren Bauer, rührte der Blitz in dem Augenblicke, da er während einem Feuerausbruch aus seiner Thür treten wollte, so daß er todt zur Erden sank. Seine Oberkleider von wollenem Zeug waren ganz unversehrt; als man diese aber abzog, fand man nicht allein das Brusttuch nebst dem Hemde, welche wahrscheinlich von Leinwand waren, sondern auch die Haut samt dem Fleische bis an die Knochen auf der ganzen rechten Seite verbrannt. Eine Magd, die diesem Manne behülflich seyn sollte, sein Vieh zu Hause zu treiben, wurde zur selbigen Zeit und an demselbigen Orte vom Feuer getroffen. Sie war an derselben Seite vom Feuer verbrannt, und obgleich die Leute vom Hause zuliefen, ihr die Kleider abzogen und andere anlegten, brandte die in die Schweißlöcher eingedrungene Feuermaterie doch noch so stark, daß die neuangelegten Kleider gesengt befunden worden. Sie lebte so unter Ausstehung der heftigsten Schmerzen einige Tage, und starb, nachdem der ganze Körper geschwollen und in ein einziges Geschwüre verwandelt worden war. Von der durchdringenden Kraft dieses Blitzes wurde man auch dadurch überzeugt, daß selbiger die dichtesten und festesten Felsen, die ihm im Wege standen, durchdrang und sie vermittelst seiner schmelzenden Kraft mit runden Löchern durchbohrte, die an der Seite des Einganges etwas größer waren, als da wo der Blitz wieder herausgefahren war.

Da wir auf der Insel Viidöe zuerst das Feuer sahen, glaubten wir, es wäre auf dem Hekla, der ohngefähr auf eben dem Striche, als der Myrdals-Jökul, wiewohl etwas mehr südlich von hier lag. Wir schickten uns also an, die Reise dahin anzutreten, welchen Vorsatz wir aber fahren lassen mußten, als wir durch einen Bothen erfuhren, daß es der Katlegiaa sey, der da brenne, und daß selbiger im Winter ganz unzugänglich sey. Erst im folgenden Sommer traten wir diese Reise an, giengen erst über das Rangarvalle-Syssel und hierauf längst dem Markrflot, der weißes Waßer führt und vom Torfe-Jökul kommt, ins Gebirge. Unser Weg fiel über Hodaland, eine sehr grasreiche Gegend, die zuvor bewohnt gewesen, wo wir den Oeesiälds-Jökul, der den westlichen Theil des Myrdal-Jökuls ausmacht, und der vor Zeiten auch Feuer und Wasser gespyen hat, gerade und dichte vor uns hatten. Aus zweyen Bergklüften liefen zwey Arme des Eises in das flache Land hinab, welche Art Eisberge Fald-Jökule genennt werden, indem die bemeldten Arme das eine Jahr zu und das andere wieder abnehmen; was vom Drangöe-Jökul gesagt ist, stimmt wohl hiermit in etwas überein, allein die mehrsten Fald-Jökule in Ost-Island sind theils beträchtlicher, theils von etwas anderer Beschaffenheit. Der Ooeffiälds-Jökul war durch die Entzündung des Katlegiaas, ob er gleich 5 Meilen davon entfernt lag, sehr vom Eise befreuet, und folglich niedriger geworden, so daß man zwey Bergspitzen, nebst einem schwarzen Felsrücken darzwischen, aus dem Eise hervorragen sah, ob sie gleich Menschengedenken damit bedeckt gewesen. Noch wunderbarer schien uns das, was uns der Sysselmann und verschiedene Einwohner dieser Gegend versicherten, daß nämlich der Solheime-Jökul, der einen Theil des Myrdals-Jökul ausmacht und zwischen dem Ooeffiälds-Jökul und dem Katlegiaa liegt, sich während der Entzündung des letzteren sehr heftig auf und nieder bewegt habe und zuletzt fast doppelt so hoch, als zuvor, geworden sey. Zur Bestätigung dieser Erzählung diente uns der einmüthige Bericht aller Einwohner dieser Gegend, die, durch diese ungewöhnliche Erscheinung erschrocken, lange Zeit befürchteten,

der Eisberg möchte eben ein solches Trauerspiel, wie der Katlegiaa, aufführen, welches sie allerdings mit Wahrscheinlichkeit vermuthen konnten, da selbiger in vorigen Zeiten mehrmalen Feuer gespien. Um die Ursache dieser Bewegung zu entdecken, muß man wissen, daß auch die entferntesten feuerspeyende Eisberge eine Zusammenhang mit einander haben, daß die Luft in denselben einen sehr starken Zug verursacht, und daß einige unter ihnen selbst mit dem Meer Gemeinschaft haben, welches letztere nicht allein aus den grundlosen frischen Seen, die man darauf antrifft, sondern vornämlich auch aus den erschrecklichen Überschwemmungen bey einem Ausbruche geschlossen werden kann, zumal da alles auf den Eisbergen befindliche Eis zu solchen Überschwemmungen nicht hinreichend seyn würde und da die Jökule ihr Eis nicht so sehr geschmolzen als in abgesprungenen Stücken verlieren. Aus diesem zusammen genommen, erhellet denn also, daß die feuer- und waßerspeyenden Berge zu ihrer Erhaltung Waßer aus dem Meere bedürfen oder auch in selbst in ihren Tiefen große Seen haben müssen, und daß sie also, wenn das Feuer zu wirken anfängt, durch die Ausdehnung der Luft anfangen können, zu treiben, sich von der Stelle zu heben und zu erhöhen. Wenn nun die Natur an einem Orte an einem Feuerausbruch arbeitet, so kann das in Bewegung gesetzte Waßer von einem andern Orte einmal weggezogen und also das Eis erniedriget werden, zweytens aber kann es auch, wenn die Lage des Grundes es erfordert, stark dahin geführt werden, so daß alles Eis des andern Berges durch die von dem Waßer herbey geführten Materien erhöht wird, und der Berg selbst höher geworden zu seyn scheint. Durch diese Hypothese wird man in Stande seyn die Beschaffenheit und die Erscheinungen der in Ost-Island befindlichen waßer- und feuerspeyenden Berge zu erklären, und das, was künftig noch von den Jökulen bey dieser Reisebeschreibung erzählt werden soll, wird hoffentlich dazu dienen, sie zu etwas mehr als zu einer Hypothese zu machen."

(Des Vice-Lavmands Eggert Olaffsens und des Landphysici Biarne Povelsens Reise durch Island, veranstaltet von der Königlichen Societät der Wissenschaften in Kopenhagen, beschrieben von bemeldtem Eggert Olassen, Teil 2, Kopenhagen und Leipzig (1775), S. 74-79)

Uno von Troil's Reise zum Heckla im Jahre 1772

"Die Ursache, daß mehr vom Heckla, oder wie er da im Lande heißt *Hecklu-fiall* geredet wird, als von andern eben so großen und verheerenden Vulkanen, liegt wohl theils daran, daß derselbe so häufig hintereinander Feuer gespien, theils daß er so liegt, daß er allen nach Grönland und Nordamerika seegelnden Schiffen in die Augen fällt. Da wir denselben unter allen feuerspeyenden Bergen mit der größten Genauigkeit untersucht haben; so will ich hier eine Beschreibung von dem Zustande geben, worin wir ihn den 24. September 1772 antrafen.

Nachdem wir vorher viele Strecken von Lava gesehen, worunter Garde und Hvaleyre hraun die größten waren, setzten wir unsere Reise bis an den Fuß des Berges fort. Wir ließen daselbst ein Zelt aufschlagen, um darinn unser Nachtquartier zu nehmen, und um an folgenden Morgen mit erneuten Kräften den Berg besteigen zu können. Das Glück war uns auch sehr günstig, so daß wir bey einem erwünschten Wetter hier alles sehen konnten, was wir begehrten, das Feuerspeyen selbs bloß ausgenommen.

Der Berg liegt im südlichen Theil des Landes, ungefähr 4 Meilen vom Ufer, und ist oben in drey Spitzen getheilt, wovon die mittelste die höchste und nach einer genauen Abmessung nach Ramsdens Barometer etwas über 5000 Fuß höher ist, als das Meer. Anfangs bedienten wir uns noch unserer Pferde, mußten aber solche bey der ersten Öffnung wo das Feuer ausgebrochen war, stehen lassen. Dieß war ein mit hohen glasirten Wänden umgebenes Feld, dessen Boden mit hohen glasirten Klippen angefüllt ist, die mit nichts als mit sich selbst verglichen werden können.

Höher herauf fanden wir eine Menge Grus und Steine, und endlich noch etwas weiter herauf eine neue Öffnung, die nicht sehr tief war, aber doch weiter herunter gieng als bey der obersten Spitze. Uns dünkte, daß wir hier deutliche Spuren von siedendheißem Wasser bemerken konnten.

Nicht weit davon fieng der Berg an, mit Schnee bedeckt zu werden, einige kleine Flecken ausgenommen, die an verschiedenen Stellen blos waren. Wir konnten anfangs die Ursache davon nicht mit Gewißheit entdecken, fanden aber hernach, daß es eine Folge der aus dem Berge aufsteigenden heißen Dünste war. Je höher wir herauf kamen, desto größer wurden diese Flecken, und ungefähr 200 Ellen von der Spitze war ein Loch das etwa anderthalb Elle im Durchmesser hatte, woraus ein so heißer Dunst hervor stieg, daß wir nicht im Stande waren, mit dem Thermometer den Grad der Hitze zu untersuchen.

Hier fieng die Kälte an sehr beschwerlich zu werden, denn Farenheits Thermometer, der unten am Berge 54° war, fiel nun bis auf 24°, und der Wind war überdem in den Wolken so heftig, daß wir uns bisweilen niederlegen mußten, um nicht von den häufigen Windstößen in die schrecklichsten Abgründe herunter gestürzt zu werden.

Wir waren nun auf eine der obersten Spitzen, als unser Begleiter, der an diesem Spaziergange kein sonderliche Vergnügen fand, uns zu überreden suchte, daß hier die höchste Spitze des Berges sey. Wir hatten eben unsere Beobachtungen geendigt, und dabey gefunden, das Ramsdens Barometer auf 24, 238 und der daran befestigte Farenheits Thermometer auf 27 stand, als sich zum Glück die Wolken zertheilten, und wir etwas weiter davon noch einen höhern Gipfel erblickten. Wir hatten keine lange Ueberlegung nöthig, um uns sogleich dahin zu begeben, und fanden solchen oben acht Ellen in der Breite und 20 in die Länge ganz frey von Schnee, doch war der Sand noch ganz naß von dessen Wegschmelzung. Hier hatte man zu einer und derselben Zeit beides eine große Kälte und Hitze, denn in der Luft war Farenheits Thermometer allezeit 24, wenn man ihn aber an die Erde setzte, stieg er bis zu 153. Der Barometer war 22, 247 und dessen Thermometer 38.

Wir konnten hier nicht länger verweilen, so große Lust wir auch dazu hatten, sondern begaben uns wieder herunter, nachdem wir dort die letzte Öffnung betrachtet hatten, wo die eine Wand ganz über den Haufen geworfen, die andere aber mit Graus und Asche bedeckt war. Auf dem Rückwege bemerkten wir drey ansehnliche Öffnungen. In der einen sahe alles so roth aus als Ziegelstein. Aus einer andern war die Lava in einem ungefähr 50 Ellen breiten Strohm ausgebrochen, welcher von den Isländern *stenaar* d. i. Steinfluß genannt ward und der etwas weiter hin sich in drey breite Arme theilte. Weiter funden wir eine nicht sehr große aber cirkelrunde Öffnung, auf deren Boden wir einen Berg in Gestalt eine Zuckerhuts erblickten, bey dessen Auswerfung das Feuer schien seine letzte Kraft angewandt zu haben.

Wie vielmals der Heckla Feuer gespien hat, kann man aus dem im XVIII. Brief gegebenen Verzeichnisse aller Feuerausbrüche sehen, (nemlich 22 mahl). Der letzte Feuerausbruch fieng 1766 den 4. April an und währte bis den 7. September desselben Jahrs. Auch im December 1771 sowohl als im September 1772 gab er Flammen von sich.

Der Berg besteht nicht aus Lava, sondern größtentheils aus Sand, Gries und Asche, welche nebst großen theils geschmolzenen theils wenig vom Feuer angegriffenen Steinen ausgeworfen sind. Hier gab es auch allerhand Arten Bimssteine, worunter wir ein Stück mit Schwefel fanden. Die Bimssteine waren bisweilen so ausgebrannt, daß sie so leicht als Werg waren, sie hatten oft eine schöne Gestalt und Farbe, waren aber dabey so mürbe, daß man sie kaum von einem Ort zum andern bringen konnte. Von der gewöhnliche Lava fand man

sowohl ganze Stücke als Scherben, imgleichen eine Menge an seinen äusseren Theilen verbrannten schwarzen Jaspis, der oft wie Bäume und Zweige gebildet war. Unter den hier ausgeworfenen Steinen, welche dem Feuer zur Nahrung dienen, sahe man auch etwas Schiefer, der zwar jetzt roth aussahe, allein durch das Feuer ausgebrannt seyn mögte." (Briefe welche eine von Herrn Dr. Uno von Troil im Jahr 1772 nach Island angestellte Reise betreffen, Upsala und Leipzig (1779), Zwanzigster Brief, S. 229-233)

Die vierundzwanzigste Eruption der Hekla im Jahre 1766

"Nachdem der Vulkan seit 1683 geruht hatte (der Ausbruch von 1728 verdient gar nicht in Betracht gezogen zu werden), erfolgte wieder eine Eruption, die vielleicht heftiger war als alle vorhergehenden. Von einem gelehrten Isländer, Bischof Hans Finnsen, wurde über diesen Ausbruch eine kleine Schrift herausgegeben: *Efterretning om Tildragelserne ved Bjerget Hekla udi Island i April og følgende Maaneder, 1766* (Kopenhagen, 1767), aus der ein gedrängter Auszug nachstehend folgt:

Viele Eingeborene und Ausländer waren der Meinung, dass man nie wieder einen feurigen Ausbruch der Hekla zu befürchten habe, da sie ihn für gänzlich ausgebrannt hielten. Allein in dem Winter von 1765 auf 1766 ward man gewahr, dass die Vermuthung derjenigen, die eben wegen der langanhaltenden Ruhe einem baldigen und vielleicht gar heftigen Ausbruch entgegensahen, die richtige gewesen sei, indem sich um die Hekla herum deutliche Vorboten eines Feuerausbruchs zeigten. Der Winter war so gelinde, dass man vor Ostern nur zweimal Frost hatte, eine Erscheinung, deren sich die ältesten Leute nicht erinnerten. Der See Selsvatn trocknete aus und alle Quellen und Bäche versiegten allmählich, indem ihr Wasser durch die gesteigerte Erhitzung des Bodens verdampfte, oder sich auf den Spalten, welche durch die Erschütterung des Bergs entstanden waren, in der Tiefe verlor. In der Umgegend und den Berg verdorrte die Heide und das Gras durch die unterirdische Wärme. Hierauf erfolgte dann am ersten Sonnabend nach Ostern, den 3. April 1766 morgens um 3 ½ Uhr derjenige Ausbruch, der dieses Jahr in der Geschichte der Hekla merkwürdig gemacht hat. Nachdem nämlich in der vorhergehenden Nacht ein anhaltendes Erdbeben die Gegend um den Berg erschüttert hatte, stieg zu jener Stunde unter einem fortwährenden Donnern und Krachen eine mächtige schwarze Sandsäule aus der Hekla auf, worin man glühende Steine, Feuer und Blitze bemerkte. Zwei bis drei Meilen von dem Berge fielen Bimssteine, die drei Ellen im Umfange hielten, und schwere Steine, von denen einer 7 ½ Pfund wog und drei Meilen weit von dem brennenden Berge noch so tief in die gefrorene Erdrinde einsank, dass man ihn mit Hebestangen herausbrechen musste. Die Aschensäule nahm während des ganzen Vormittags ihre Richtung gegen Nordwest und würde, da sie schon auf 30 Meilen hin alle Weiden mit handhohem Sande überschüttet hatte, diese bewohnten Gegenden ganz begraben haben, wenn nicht ein starker Südsüdostwind ihr gegen Mittag eine Richtung nach den öden Wüsteneien des innern Island gegeben hätte; inzwischen wurden in der kurzen Zeit doch in den Rángárvallasýsla und Árnassýsla verschiedene Höfe, Gemeindeweiden und Holzungen gänzlich verwüstet; der Fluss Rángá wurde vom Bimsstein verstopft und verursachte daher eine grosse Überschwemmung; die Þjórsá war wie jener Fluss wegen der darauf schwimmenden Bimssteine gar nicht sichtbar und das Meer selbst längs der Küste auf eine Länge von 30 Meilen so damit bedeckt, dass die Fischerboote in ihrer Fahrt aufgehalten wurden. Im Þingeyjarkloster, 31 Meilen von der Hekla, war die Finsterniss so stark, dass man am Mittag nicht unterscheiden konnte, ob ein Bogen Papier weiss oder schwarz war. Zu Glámbær in der Skagafjardarsýsla vermochte man dicht an der Hausthür nur durch das Gefühl dieselbe zu finden, und auf dem Bischofssitz zu Hólar, 33 Meilen von der Hekla, glaubte man die Sterne durch die Staubwolke zu sehen.

Nach diesem ersten Ausbruche, der innerhalb acht Stunden so viel Schaden verursacht hatte, brannte die Hekla bis zum 5. Juli desselben Jahres an 24 Tagen, darunter am heftigsten am 1. Mai. Alle dieses Ausbrüche waren von starken Erdbeben und einem erstaunlichen Donnern und Krachen begleitet. Am 9. April ereignete sich wieder ein Hauptausbruch; ein Strom glühender Lava drang aus der Seite des Bergs und ergoss sich über eine Meile weit gegen Südost; am Abend desselben Tags stiegen nach heftigem Toben im Innern des Bergs zwei ungemein hohe Feuersäulen aus den Kratern, welche auch zu gleicher Zeit glühende Felsmassen nach allen Richtungen hin ausspien. Die Zahl der Krater, welche bei dieser Eruption der Hekla thätig waren, betrug vier; aus zweien ergossen sich nur Lavaströme, aus dem dritten drangen siedende Wasserfluten hervor; aus dem vierten endlich, welcher an Heftigkeit der Ausbrüche die andern übertraf, wurden fast unablässig Sand-, Aschen- und Feuersäulen, sowie die glühenden Felsmassen ausgeschleudert. Am 21. April fand wiederum ein sehr heftiger Ausbruch statt, die Höhe der Aschensäule ward zu 16000 Fuss gemessen. Von dieser Zeit bis zum 1. Mai schien der Berg zu ruhen; an jenem Tage aber gerieth der Vulkan von neuem in Aufruhr; am 8. Mai wiederholte sich dies; von da bis zum 18. Mai herrschte vollkommene Stille im Vulkan, und schon gaben sich die Umwohnenden der Hoffnung hin, dass diese schreckensvollen Ereignisse ihr Ende erreicht hätten, als am 18. Mai wieder ein sehr starker Ausbruch stattfand; ja am 23. Mai bildete sich sogar noch ein neuer fünfter Krater, welcher Bimssteine und Säulen feuriger Aschen auswarf; an diesem Tage spritzte der dritte Krater grosse Wassermassen, Springbrunnen gleich, hoch zu den Wolken empor. Am 31. Mai, 1., 8., 14., 17. und 20. Juni wiederholten sich diese Phänomene, die unaufhörlich von heftigem Krachen und Toben begleitet wurden, welches dem Innern des Bergs entstammte. Dann beruhigte sich die Hekla allmählich.

Nach diesen Eruptionen trat für Island eine sehr traurige und verhängnisvolle Zeit ein. Die Einwohner wurden von einer skorbutartigen Krankheit heimgesucht, welche einen grossen Theil derselben wegraffte. Vieh aller Art starb in bedeutender Menge, weil alle Weiden selbst in beträchtlicher Entfernung von dem Vulkan verbrannt waren; einige kleine Gehölze, die sich noch nordöstlich und nordwestlich von der Hekla erhalten hatten, verbrannten bei dieser Eruption. Die Fische, die schon zum Laichen die süssen Gewässer hinaufgezogen waren, kamen sämtlich um."

(William Preyer und Dr. Ferdinand Zirkel, Reise nach Island im Sommer 1860, Leipzig (1862), Die historischen Ausbrüche der isländischen Vulkane, S. 458-461)

Mackenzie's travel to Mount Hekla in the year 1810

"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 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 Eyalstadir. 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 the sea, reaches from Eyarback to the Markarflot, 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 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 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.

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 Snaefell Jokul, terminates a long group of comparatively low hills. Viewed from the westward, when Eyafialla, Tinfiialla, 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 north-east 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 scoriae 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 slags, the accumulation of which has rendered it passable. We travelled about fourteen miles, judging of the distance by the time our journey occupied, and then halted at the foot of a large mass of lava, and changed our horses ; stopping no longer than was necessary for shifting our saddles. The subsequent part of our route, though still through an extremely desolate country, was rendered more easy by the absence of lava, and somewhat less forbidding by the appearance of thinly scattered vegetation on the vallies, and on the sides of some of the hills. Ere long we found ourselves inclosed in a hollow among the mountains, from which there was no apparent outlet; but following the steps of our guide, we pursued a winding course, passing through a number of rivulets of very thick muddy water which proceeded from under the snow on the mountains.

As we went along we observed several craters in low situations, from which flame and ejected matter had proceeded during the convulsions to which this part of the island has been particularly subjected. After having advanced about fifteen miles farther, and traversed a part of that immense waste which forms the interior of Iceland, and is partially known only to those who go in search of strayed sheep, we descended by a dangerous path into a small valley, having a small lake in one corner, and the extremity opposite to us bounded by a perpendicular face of rock resembling a stream of lava in its broken and rugged appearance. While we advanced, the sun suddenly broke through the clouds, and the brilliant reflection of his beams from different parts of this supposed lava, as if from a surface of glass, delighted us by an instantaneous conviction, that we had now attained one of the principal objects connected with the plan of our expedition to Iceland. We hastened to the spot, and all our wishes were fully accomplished in the examination of an object which greatly exceeded the expectations we had formed. The mineralogical facts which here presented themselves to our notice, will be described in a subsequent chapter.

On ascending one of the abrupt pinnacles which rose out of this extraordinary mass of rock, we beheld a region, the desolation of which can scarcely be paralleled. Fantastic groups of hills, craters, and lava, leading the eye to distant snow-crowned Jokuls ; the mist rising from a waterfall ; Jakes embosomed among bare, bleak mountains ; an awful profound silence ; lowering clouds ; marks all around of the furious action of the most destructive of elements ; all combined to impress the soul with sensations of dread and wonder. The longer we contemplated this scene, horrible as it was, the more unable we were to turn our eyes from it; and a considerable time elapsed, before we could bring ourselves to attend to the business which tempted us to enter so frightful a district of the country. Our discovery of obsidian afforded us very great pleasure, which can only be understood by zealous geologists ; and we traversed an immense and rugged mass of that curious substance, with a high degree of satisfaction ; though various circumstances prevented our tracing it so fully as we wished.

Towards the east, at the distance of three or four miles, we observed a very large circular hollow, the sides of which were chiefly of a bright red colour; from which circumstance, and its general appearance, we concluded that it was the crater of an extinct volcano. The waterfall, the noise of which we distinctly heard, though at the distance of several miles, was formed by the Tunaa, a large river, which takes its course in this part of the country, and joins the Thiorsaa.

Brandtson told us that he had never been farther in this direction ; and pointed out to us the Sprangè Sands, a vast plain, consisting of volcanic matter, which is stretched over a great part of those inhospitable regions already mentioned. Numerous obstacles present themselves to

any person who may think of entering this dreadful country, among which the want of food for horses is the principal. The rivers, lakes, streams of lava, all the horrors of nature combined, oppose every desire to penetrate into these unknown districts ; and the superstitious dread in which they are held by the natives is readily excused, the instant they are seen, even from afar. We saw the lake called Fiske Vatn, and the summits of several Jokuls, in the distance, which will be more particularly noticed afterwards, as we observed them more distinctly from another station.

Before we had satisfied our curiosity, rain fell in torrents, and continued to do so for an hour or two. We had not proceeded far on our return to Naifurholt, when it ceased, and was succeeded by a very thick fog, through which Brandtson guided us safely, and we reached our tents soon after twelve o'clock at night, having been absent twenty-two hours, during seventeen of which we were on horseback.

After the fatigue we had undergone in our excursion towards the Torfa Jokid in search of obsidian, we did not expect to find ourselves sufficiently refreshed to attempt ascending Mount Hekla on the following day ; but, as we had been long in the constant habit of enduring daily hardships, we rose at an early hour on the third of August, quite alert ; and, on seeing the whole of the mountain free from clouds, we were soon ready to finish our labours, by ascending Hekla, and attaining the summit of a mountain whose fame has spread to every quarter of the world. At ten o'clock, we were ready ; and Brandtson having collected our horses, we mounted them, and began our expedition under circumstances as favourable as we could wish. We rode through sand and lava about three miles, when the surface became too rugged and steep for horses. Our guide proposed leaving the poor animals standing till we returned ; but though they would not have stirred from the spot, we sent them back, not choosing that such valuable and steady servants should remain a whole day without food. We now proceeded a considerable way along the edge of a stream of lava, and then crossed it where it was not very broad, and gained the foot of the south end of the mountain. From this place we saw several mounts and hollows from which the streams of lava below appeared to have flowed. While we had to pass over rugged lava, we experienced no great difficulty in advancing ; but when we arrived at the steepest part of the mountain, which was covered with loose slags, we sometimes lost at one step, by their yielding, a space that had been gained by several. In some places we saw collections of black sand, which, had there been any wind, might have proved extremely troublesome. The ascent now became very steep, but the roughness of the surface greatly assisted us.

Before we had reached the first summit, clouds surrounded us, and prevented our seeing farther than a few yards. Placing implicit confidence in our guide, we proceeded, and having attained what we thought was the nearest of the three summits, we sat down to refresh ourselves, when Brandtson told us that he had never been higher up the mountain. The clouds occasionally dividing, we saw that we had not yet reached the southern summit. After having passed a number of fissures, by leaping across some, and stepping along masses of slags that lay over others, we at last got to the top of the first peak. The clouds now became so thick, that we began to despair of being able to proceed any farther. Indeed it was dangerous even to move ; for the peak consists of a very narrow ridge of slags, not more than two feet broad, having a precipice on each side many hundred feet high. One of these precipices forms the side of a vast hollow which seems to have been one of the craters. At length the sky cleared a little, and enabled us to discover a ridge below, that seemed to connect the peak we were on with the middle one. We lost no time in availing ourselves of this opportunity, and by balancing ourselves like rope-dancers, we succeeded in passing along a ridge of slags so narrow that there was hardly room for our feet. After a short, but very steep ascent, we gained

the highest point of this celebrated mountain.

We now found that our usual good fortune had not yet forsaken us ; for we had scarcely begun to ascend the middle peak, when the sky became clear, and we had a full view of the surrounding country. Towards the north it is low, except where a Jokul here and there towers into the regions of perpetual snow. Several large lakes appeared in different places, and among them the Fiske Vatn was the most conspicuous. In this direction we saw nearly two-thirds across the island. The Blaefell and the Lange Jokuls, stretched themselves in the distance to a great extent, presenting the appearance of enormous masses of snow heaped up on the plains. The Skaptar Jokul, whence the great eruption that took place in the year 1783 broke forth, bounded the view towards the north-east. It is a large, extensive, and lofty mountain, and appeared to be covered with snow to the very base. On the side next to us, though at a distance of about forty miles, we plainly discerned a black conical hill, which very probably may be one of the craters that were formed during the eruption. The Torfa, Tinfialla, and Eyafialla Jokuls, limit the view of the eastern part of the country. Towards the south, the great plain we had passed through seem-ed as if stretched under our feet, and was bounded by the sea. The same valley was terminated towards the west by a range of curiously peaked mountains, those in the neighbourhood of Thingvalla, and to the north and west of the Geysers.

The middle peak of Hekla forms one side of a hollow, which contains a large mass of snow at the bottom ; and is evidently another crater. The whole summit of the mountain is a ridge of slags, and the hollows on each side appear to have been so many different vents from which the eruptions have from time to time issued. We saw no indications that lava had flowed from the upper part of the mountain ; but our examination, from the frequent recurrence of fog, was unavoidably confined.

After we had satisfied ourselves in surveying the surrounding country, we began to collect specimens of the slags, and perceived some of them to be warm. On removing some from the surface, we found those below were too hot to be handled ; and on placing a thermometer amongst them, it rose to 144°. The vapour of water ascended from several parts of the peak. It had been remarked to us by many of the inhabitants, that there was less snow on Hekla at this time than had been observed for many years. We supposed, therefore, that the heat now noticed might be the recommencement of activity in the volcano, rather than the remaining effects of the last eruption which took place in the year 1766.

The crater, of which the highest peak forms a part, does not much exceed a hundred feet in depth. The bottom is filled by a large mass of snow, in which various caverns had been formed by its partial melting. In these the snow had become solid and transparent, reflecting a bluish tinge ; and their whole appearance was extremely beautiful, reminding us of the description of magic palaces in eastern tales.

At the foot of the mountain, the thermometer at half past nine o'clock stood at 59°. At eleven, it was at 55°, and at four, on the top, at 39°.

Our descent was greatly retarded by thick fog ; and we found it much more hazardous than the ascent. We missed our way and were under the necessity of crossing the lava we had passed in our way up, at a place where it had spread to a much greater breadth, and, from the rapidity of the slope along which it had flowed, had become frightfully rugged.

Mount Hekla has acquired a degree of distinction among volcanoes, to which it does not seem

to be entitled. It is far behind Etna and Vesuvius, both in the frequency and magnitude of its eruptions. We could not distinguish more than four streams of lava ; three of which have descended on the south and one on the north side ; but there may be some streams on the east side, which we did not see. The early eruptions of this mountain do not seem to have been regularly recorded. Olaffson and Paulson say, that after careful research they found that the number of eruptions amounted to twenty-two; and none are recorded as having happened before the year 1004. There were eruptions in the years 1137, 1222, 1300, 1341, 1362, 1389, 1538, 1619, 1636, and 1693. Flames appeared in the neighbourhood in 1728. In 1554, there were eruptions from the mountains to the eastward ; and in 1754, flames burst out to the westward. From the mountain itself, no eruption took place between the years 1693 and 1766, an interval of seventy-three years ; and during this last period of activity, no lava was thrown out. The following year, flames broke out afresh, and the mountain was not perfectly quiet in the year 1768 : since that time, it has remained inactive. We had no opportunity of measuring the height of Mount Hekla ; but we have been informed by Sir J. Stanley that the elevation which resulted from his observations, was 4,300 feet, and this, from different circumstances, we believe to be correct.

In the year 1755, a terrible eruption proceeded from the mountain called Kattlagiau Jokul, which is situate to the eastward of Eyafialla. From the accounts of this eruption, it does not appear that any lava flowed ; but immense torrents of water carried destruction before them through the neighbouring country ; and ignited stones and ashes were thrown in all directions. The electrical phenomena that accompanied this eruption, seem to have been very tremendous; several people and cattle having been killed by the lightning. The mountain continued in a state of violent activity during a whole month ; and, indeed, it may be said to have been so during a whole year ; for, between January and September of the year 1756, five different eruptions took place. We heard a report, that early in the summer the inhabitants in the neighbourhood had some reason to apprehend an impending eruption ; but we could get no distinct account of the symptoms that had been observed. The earliest eruption of Kattlagiau, appears to have happened about the year 900 ; and, since that period, to the great one in 1755, only five have occurred.

It is mentioned, in the history of Iceland during the 18th century, that an eruption took place from Eyrefa Jokul, in the south-east part of the island, in the year 1720; and one from the lake of Grimsvatn in the year 1716.

In the north-east quarter of Iceland, near a large lake called Myvatn, is Mount Krabla, which became remarkable by dreadful eruptions of lava that proceeded from it between the years 1724 and 1730. Some of the streams of lava flowed into the lake, destroyed the fish, and almost dried it up. There were eruptions also from the mountains round Krabla; and an extensive district of inhabited country was laid waste. At a place called Reikiahlid, near Krabla, sulphur is found in the same circumstances as that at Krisuvik, but in larger quantities. It was from the former place that most of the sulphur brought from Iceland was exported.

In the year 1000, an eruption took place in the Guldbringè Syssel. Another broke out near Reikianes in the year 1340 ; and one is said to have been seen at a great distance in the sea, in the year 1583, similar to that which was observed preceding the great eruption of 1783.

The total number of recorded eruptions appears to be the following :

From Hekla, since the year 1004, inclusive	22
From Kattlagiau Jokul, since 900,	7

From Krabla, since 1724,	4
In different parts of the Guldbringè Syssel, since 1000,	3
At sea, since 1583,	2
From the lake Grimsvatn, in 1716,	1
From Eyafialla Jokul, in 1717	1
From Eyrefa Jokul, in 1720,	1
From Skaptar Jokul, in 1783,	1
	—
	42

In chronological order, the different eruptions mentioned by Icelandic authors stand recorded thus : In the years 900, 1000, 1104, 1137, 1222, 1300, 1340, 1341, 1362, 1369, 1422, 1538 (Vesuvius erupted the same year), 1554 (Etna), 1583, 1619, 1636 (Etna), 1693 (Vesuvius, 1692 ; Etna, 1694), 1716, 1717 (Vesuvius), 1720, 1724, 1728, 1730 (Vesuvius), 1754 (Vesuvius), 1755 (Etna), 1756, 1766 (Etna and Vesuvius), 1771 and 1772, flames seen on Hekla; 1783. Thus it appears, that many of the eruptions that are known to have taken place since Iceland was inhabited, have not been particularly noticed ; and it is very probable, that numerous eruptions of less note have been passed over. We may reckon active all those mountains which have burned within the last century. Of these there are six; - Hekla, Krabla, Kattlagiau, Eyafialla, Eyrefa, and Skaptar, Jokuls.

The most recent eruption that took place in Iceland seems also to have been the most awful. It proceeded from the low country near the Skaptar Jokul in the year 1783. Mr. Stephenson of Indreholm was ordered by the King of Denmark to proceed from Copenhagen, where he happened to be during the eruption, and to visit the district, that his Majesty might be enabled to alleviate the distresses occasioned by the eruption. That gentleman has published a laboured account of the whole ; but, although there is no doubt of the eruption having been one of the most terrible in the annals of volcanoes, he seems to have depended too much on reports and information, which appear to be exaggerated. He himself told us, that the lava was so hot at the time he approached it, which was about a year after the eruption, that it could not be examined, and that it has never been traced to its source. Another account has been written, which, from what we heard in Iceland, is the most correct. It is to be lamented that the present state of the Icelandic press, prevents its being given to the public.

The whole tract between Hekla and Krabla is a desert quite impassable and unknown ; and there is still subsisting a ridiculous notion that it is inhabited by a tribe of robbers. Did such people really exist, and did they know the dread which they inspire, they might easily procure more comfortable quarters.

No single volcanic mountain which we saw, appeared to have thrown out much lava. Probably this has been owing to the vast number of apertures which have given vent to the rage of subterraneous heat. In other countries, where it has for ages continued to explode from one or two mountains, the lava is confined to one place, and is abundant.

There is no country in the known world where volcanic eruptions have been so numerous as in Iceland, or have been spread over so large a surface. No part of the island is wholly free from the marks of volcanic agency ; and it may be truly called the abode of subterraneous heat. Various volcanic mountains and streams of lava, are mentioned as existing in the eastern and northern districts, by Eggert Olafson, in his *Ennarrationes Historicae de Natura et Constitutione Islandiae*. In the north-west quarter, in the district of Isafiord, there is a volcanic mountain called Glama, which he describes as rivalling the magnitude of the Snaefell Jokul.

Thus it appears, that the force of subterraneous fire has been exerted upon every part of this extensive island ; and when we consider the eruptions that have been seen at a distance in the sea, we are safe in estimating, that, in this part of the earth, one continued surface of not less than 60,000 square miles has been subjected to that engine of destruction.

On the 4th of August we took leave of Hekla, and our excellent guide Brandtson, whose great activity, and obliging disposition, must recommend him to all travellers who may have occasion for his services. After passing the different streams of lava on the south side of the mountain, we left the plain, and ascended a ridge from which we had a view of the Westmann Islands and Eyafialla Jokul. Having descended towards the valley of the Markarfljot, we arrived at Hluderendè, the house of Sysselman Thoranson, brother of the Amtmand. The Markarfljot is a large and remarkable river. Its course to the sea is short, and it is formed by numerous streams, which descend precipitately from the Jokuls, bringing down a quantity of clay which gives it a white colour, and a fetid smell, especially perceptible in autumn. It divides into numerous branches, and very frequently changes its course, sometimes keeping close to the mountains, and at other times flowing ten or fifteen miles to the westward."

(Sir George Steuart Mackenzie, Travels in the Island of Iceland during the Summer of the Year 1810, 2. ed., Edinburgh (1812), p. 234-253)

Nachricht von der Entzündung des Berges Hekla im Jahre 1693

"Nachdem der feuerspeyende Berg Hekla, in den Jahren 1104, 1157, 1222, 1300, 1341, 1362, 1389, 1558, 1636 seine Kräfte gezeiget hatte, so schien es fast nicht, daß er weiter etwas versuchen würde, bis er in dem verwichenen 1693sten Jahre abermal seinen Schlund geöffnet, und so große Verwüstungen in den umliegenden Gegenden angerichtet hat. Etwas besonders merkwürdiges hierbey ist, daß, da der Berg auf einer Seite Feuer ausspeyet, die Haufen Schnee, von denen er auf der andern Seite bedeckt ist, niemals schmelzen, da doch das Feuer die größten Steine in Asche verwandelt.

Geschichte der Entzündung im Jahre 1693

Den 13ten Hornung. Der Tag neigete sich, als die Isländer mit Erstaunen den Anfang der Entzündung durch ein Getöse vernahmen. Zuerst brachen Wolken von Rauch heraus, die sich darauf weit und breit zertheilten, und eine dicke Finsterniß verursachten, bald hernach ward der Erdboden von so heftigen Stößen erschüttert, daß auch die Fischer auf der See nicht ohne Gefahr spürten, daß ihre Kähne wankten und zitterten. Man vernahm hierauf ein ungewöhnliches Gebrüll, welches sich mit großem Murmeln um die Hölen des Berges hören ließ, als wenn der Welt Untergang drohete.

Bis hierher waren die Einwohner noch außer Gefahr, jetzt aber fängt der Hekla an, feurige Steine auszuwerfen, darunter einige die Größe eines Hauses hatten, welche aber, nachdem die Gewalt der Flammen sie eine Meile weit fortgetrieben hatte, in Stücke zerfielen. Hierauf folgte ein starker Rauch, welcher uns gänzlich das Gesicht würde benommen haben, wenn nicht die Flammen, welche aus dem Gipfel der Höhe und den Seiten der Berges, desgleichen aus der umher liegenden Ebene aus verschiedenen Luftlöchern als aus Schornsteinen herauszischten, dazwischen geleuchtet hätten. Er spie darauf große Klumpen Schwefel, Salpeter, Harz und andere leimische Sachen aus, die von einer Seite des Berges ein Feuerwerk vorstellten, auf der andern aber manches in eine ewige Finsterniß vergruben. Nicht nur die ganze Nacht, sondern bis an den folgenden Mittag, schüttete er eine unsägliche Menge feurigen Sandes und Asche aus.

Den 14ten Hornung. Nachdem der Rauch den Tag eine Zeitlang verfinstert hatte, so zertheilte er sich, und man erblickte um den Gipfel des Hekla einen gewissen harzichten Dunst, welcher sich plötzlich entzündete, und mancherley Schein von sich gab.

Die darauf folgende Nacht war das Krachen, so den ganzen Tag über zugenommen hatte, am allerheftigsten, bis endlich nach Anbruch des Tages die Feuerwolke unbeweglich stand, und blässer ward, da die Sonne unsere Hälfte mit mehrerem Glanz bestrahlte; nach demselben Untergang aber sah man aus vier Orten Flammen hervorstiegen, und das Gemurmel dauerte bis gegen Morgen fort.

Den 15ten Hornung. Heute verursachte der häufig mitten aus dem Berge hervorkommende Rauch einen dunklen Tag, wobey man auch einiges wenigens Getöse hörte. Gegen Abend sah man abermal eine Flamme, doch kleiner, als gewöhnlich.

Den 16ten Hornung wehete ein gelinder Wind, doch ward der Rauch dicker, und der Berg sprudelte einen feurigen Sandregen in die Luft, am Nachmittag aber ward die Erde von einem entsetzlichen Erdbeben erschüttert.

Den 17ten Hornung. Jetzt hatte der Rauch seine meisten Ausgänge verstopft, und brach nur aus einer Öffnung hervor, er hinderte auch das Gesicht nicht wie sonst. Das Getöse hatte gleichfalls nachgelassen, doch blitzte gegen Abend eine Flamme heraus.

Den 18ten Hornung glaubten die Einwohner, der Berg werde aufhören zu wüthen, weil der Himmel überaus heiter war; allein der nach Süden zu aufsteigende Dampf, das wiederholte Brüllen und Erschüttern der Erde, und das Feuer, welches sich des Abends von unten bis oben wunderwürdig sehen ließ, deutete das Gegentheil an.

Den 19ten Hornung breitete sich der gewöhnliche Dampf über die mittägige Gegend aus. Bald darauf beschwerte die mit Staub und schädlichem Sande angefüllte Luft die Augen, wodurch die Sterne einen guten Theil der Nacht verfinstert wurden. Es brach darauf außer der gewöhnlichen Flamme noch ein neues Feuer aus einer nach dem Meere zu gelegenen Höle des Berges hervor.

Den 20ten Hornung ließ das Getöse nach, doch ward die Luft theils von dem Sandregen, theils von dem Rauch verfinstert, weshalb man die Flamme nicht so helle, als sonst sah.

Den 21ten Hornung nahm der Rauch ab, man sah aber aus dreyen Örtern eine Flamme hervorbrechen. Der Berg, so den Tag über ziemlich still gewesen war, tönete in der Nacht heftig.

Den 22ten Hornung hinderte der Rauch und Staub abermal das Licht, desgleichen brach des Abends die gewöhnliche Flamme hervor.

Den 23. 24. 25ten Hornung war der Rauch und Sand stärker als gewöhnlich.

Den 26ten Hornung trieb ein heftiger Wind den Sand in die Luft, daß man am Mittage nichts als Ruß sah. Nach der Dämmerung aber zeigte sich die gewöhnliche Flamme.

Den 27ten Hornung vermehrte sich das Gebrüll, der Rauch und die Flamme aber ließen nach.

Den 28ten Hornung war der Staub, der die Luft erfüllte, den Augen beschwerlich. Das Brüllen dauerte fort, und viele oben zusammenschlagende Flammen verursachten ein angenehmes Schauspiel.

Man hoffte, das Elend sollte sich mit dem Monate endigen; allein der Staub häufte sich zu nicht geringer Beschwerlichkeit der Reisenden, und die gewöhnliche Flamme war noch da. In den ersten Tagen des März stieg der Rauch annoch auf, das starke Krachen aber ließ mehrentheils nach.

Den 5ten März spülte der Regen die Asche weg, derselbe würde sehr fruchtbar gewesen seyn wenn nicht diese Last die Erde bedeckt hätte.

In den nächstfolgenden Tagen schien der Hekla einen Stillstand zu machen; allein das beständige Krachen dauerte bis in den Heumonath und Erndtemonath fort. Die Flamme verschwand zwar zu Zeiten, es war aber nur der Helle des Tages zuzuschreiben, da bey der Nacht eben dieselbe Flamme von den Einwohner gesehen ward.

Es sind wenig Oerter, die von dieser entsetzlichen Entzündung nicht einigen Schaden genommen haben sollten. Es bezeugen solches viele zu der Kirche in Skalholt gehörige Güter, welche bisher von dergleichen Entzündungen unversehrt geblieben waren, jetzt aber unter ihrem Schutt begraben liegen. Die stärksten Eichen sind von den häufigen Anfällen des

Feuers und der Steine darnieder gelegt worden, der vielen durch die Asche verschütteten Wurzeln zu geschweigen. Vielen Feldern und andern fruchtbaren Örtern hat der Bimsenstein ihre Fruchtbarkeit genommen.

Die Menge der Asche war so groß, daß nur die Mittags- sondern auch die Abend- und Mitternachtsseite den Schaden davon empfanden. So gar in den entlegensten morgendlichen Gegenden vernahm man die Erschütterung der Erde, obgleich der Wind die Asche und den Rauch von ihnen wegtrieb. Ja, ein, dreyßig Meilen von dem Berge gelegenes Landgut, woselbst das Erdreich eine Menge Kräuter hervorbrachte, ward plötzlich mit Asche überdeckt. Ich will jetzt nicht von den Brunnen sagen, die bald vertrockneten, bald überliefen, bald nach Schwefel rochen."

(Nachricht von der letzten Entzündung des Berges Hekla, aus einer im Jahre 1694 zu Kopenhagen gehaltenen Streitschrift des Herrn Thorlacius de ultimo incendio montis Heclae, übersetzt, in: Hamburgisches Magazin, oder gesammelte Schriften, zum Unterricht und Vergnügen, aus der Naturforschung und den Wissenschaften überhaupt, Bd. 6 (1750), S. 97-102)

The Superstitions of the Natives

"This remarkable mountain [Hekla] has been long associated with the superstitions of the natives, to which its awful phenomena give a great degree of countenance. The lower orders still regard it with terror, and few of them have ever ventured to ascend its summit, or even to accompany strangers as guides. Pits full of burning sulphur and mud, boiling springs, and openings whence smoke and flames continually issue, are the more natural dangers by which they endeavour to induce the travellers to forego is purpose; and when these prove vain, they relate to him stories of the mountain-birds shaped like ravens, but with iron bills, which evil-treat all intruders on their domain. Its crater is the entrance of Hekla's dark abode, and in the gloomy regions beneath the Icelanders have fixed "the place where the souls of wicked persons are tormented with fire; for they will tell you that they see sometimes whole troops of infernal spirits carrying the damn'd souls into the abyss of this mount, and returning back again to fetch more. Blefkenius says, this is generally observed after some bloody battle has been fought in some place or other." Though the intercourse with strangers may have somewhat modified these superstitions in this vicinity, they are still found in all their force in the remoter parts of the island."

(James Nicol, An Historical and Descriptive Account of Iceland, Greenland, and the Faroe Islands, Edinburgh (1840), p. 31-32)

Appendix I - Über die Auswirkungen eines Vulkanausbruches auf die Gesundheit von Mensch und Tier am Beispiel des Skaptar Jokul im Jahr 1783

Im Jahr 1783 brach der Skaptar Jokul aus. Die Folgen für die isländische Bevölkerung waren so verheerend, daß Nachrichten darüber auch das europäische Festland erreichten. Der dänische König entsandte den gebürtigen Isländer Stephensen nach Island, um die Situation auf Island zu untersuchen. Dieser legte seine Beobachtungen in einer Schrift nieder, welche in einer deutscher Übersetzung aus dem Jahre 1786 hier auszugsweise wiedergegeben sind:

"Schon im Herbst 1783, da die Schafe vom Gebirge genommen wurden, fand man einige derselben mit einer unbekanntem Krankheit behaftet. Sie konnten weder gehen noch stehen; die Zähne waren los, so, daß sie nicht kauen konnten; die Kinnbacken mit Knoten besetzt, die Gelenke verwachsen und die Glieder verzerrt. Gegen Weihnachten äusserte sich diese Krankheit noch stärker auch am Hornvieh und an den Stallschafen, die denn nothwendig geschlachtet werden mußten, da sonst keine Rettung vorhanden war; doch fielen manche früher um, als man glaubte, weil die Krankheit, ob sie wohl nicht ansteckend war, oft die innern Theile stärker als die äußern angegriffen hatte. So fand man zuweilen in diesen elenden

Geschöpfen Herz, Leber, Lunge und Nieren mit Beulen überhäuft, oder stark geschwollen, oder verzehrt und ausgehöhlt, auch wohl die eine Niere aufgedunstet und die andere zusammengeschrumpft, die Kinnbacken durchfressen und als wären sie zerkerbt worden, und die Rippen oft ganz gerade gezerrt. Das Gebein löste sich gleichsam in Knorpel auf; die härtesten Knochen wurden im Kochen so mürbe, daß sie bloß mit der Hand zerbröckelt werden konnten; und wenn das angegriffene Eingeweide gekocht ward, zerfiel es von selbst in lauter kleine Stücke, die sich zwischen den Fingern zu Pulver oder Staub zermalmen liessen. Von allem diesen bin ich ein Augenzeuge gewesen. Denn da wir in der Mitte des Aprils 1784 in Island ankamen, war diese Plage noch in vollem Schwange, und ich darf frey behaupten, daß die größte Menge Vieh nach der Zeit gestorben ist.

Von dieser Krankheit unter Kühen und Schafen muß ich noch die Anmerkung machen, daß sie im Allgemeinen die letzteren weit stärker als jene betroffen hat, und in verschiedenen Syßlur, als im Mula- und Rangaurvalla-Syßla, und an mehrern Orten im Vestfirdingafiordungr unter dem Hornvieh nicht sonderlich verspüret worden ist. Dem Bericht nach hat sie sich auch im Gullbringu. und Kiosar-Syßla und hie und da im Vestfirdingafiordungr geäußert: am heftigsten aber hat sie im Skaptafells-, Arnes-, Borgarfiardar-, Myra- und Hnappadals-Syßla und im ganzen Nordlendingafiordungr gewüthet. Vom Austfirdingafiordungr hat man nichts davon gehört. Sie grif meistens die Lämmer und jungen Schafe an: doch sind in den zuletzt genannten Gegenden die vollgewachsenen und alten nicht ganz verschont geblieben. Daß diese zerstörende Seuche auch die Pferde befallen habe, davon hat mich auf der Bergreise der Anblick einiger kranken Pferde vollkommen überzeugt. Diese waren mit allen Zufällen des übrigen erkrankten Viehes behaftet, nur waren die Zähne damals nicht los. Es war übrigens erbärmlich anzusehen, wie so sehr ausgemergelt diese armen Thiere waren, und fast unbegreiflich, daß sie auf den Beinen stehen und gehen konnten. Dennoch war ihr flüchtender Begleiter genöthigt, ihnen noch eine Last aufzulegen.

Ob sich wohl ausserhalb des Skaptafelssyßla an den Pferden äusserlich keine deutliche Merkmale dieser Krankheit gezeigt haben, so ist doch wenigstens deren nächste Quelle eine mitwirkende Ursache ihres allgemeinen Sterbens gewesen. Sie fielen oft plötzlich im Stall und auf dem Felde bey einem Überfluß von Heu und Gras um: sie hungerten eher zu Tode, oder frassen, zu ihrem eben so gewissen Untergange, lieber Mist, Holzwerk, eins des andern Haare und was sie sonst habhaft werden konnten, als daß sie den Rest des Grases vom vorigen Jahr anrührten. Dieses eben so wahre als beyspiellose Exempel könnte hinreichen, die Ungesundheit und Schädlichkeit des Gewächses vom Jahr 1783 und dessen verderblichen Einfluß auf das Vieh darzuthun; ja ich bin gewiß, daß bey den Pferden die innern Theile eben sowol angegriffen wurden als bey dem andern Vieh, ob es schon nicht untersucht worden ist. Ganz unumstößlich aber wird jenes dadurch bewiesen, daß die wenigen Einwohner, die noch alt Heu vom Jahr 1782 vorrätzig hatten, ihr Vieh frisch und gesund behielten, so viel oder so lange sie mit solchem fütterten, wogegen dasjenige, was oft neben den andern oder nachher Gras von 1783 genoß, größtentheils erkrankte und umfiel. Weshalb auch einige altes und neues Gras unter einander gemengt haben, da denn die Seuche entweder gar nicht oder in geringerm Grade verspürt worden.

Endlich merke ich an, daß einiges kranke Vieh im letztverwichenen Sommer sich nach dem Genuß des neuen Grases und frischer Kräuter wieder erholt habe.

Es möchte widersprechend scheinen, wenn ich die Niederlage unter dem Vieh allein für eine Wirkung des Feuerausbruchs angesehen haben will, und doch berichte, daß in einigen Syßlur sich sonderlich keine Krankheit unter demselben geäußert habe. Sofern indessen das Feuer die ungesunde Luft, das stete Unwetter, den Miswuchs des Grases und die schlechte

Heuerndte im Jahr 1783 verursacht hat, meyne ich allerdings auch jene Seuche mit Recht hauptsächlich auf dessen Rechnung schreiben zu können.

Das Vieh war schon am Ende des diesjährigen Sommers ungewöhnlich ausgemergelt und nicht im Stande, dem ohne Beyspiel strengen Winter entgegen zu gehen. Die Einwohner hatten kaum den zur Unterhaltung desselben erforderlichen Heuvorrath, am wenigsten argwöhnten sie des letztern nachher befundene Untauglichkeit, Ungesundheit und Vergiftung. Solchergestalt ist denn wohl das Feuer die nächste Ursache zur Aufreibung des Viehs gewesen, obgleich nicht zu leugnen steht, daß die Strenge des Winters ebenfalls das Ihrige dazu beygetragen habe.

Daß der Feuerausbruch auch auf den Menschen einen grossen Einfluß gehabt habe, kann um so weniger befremdend seyn, als die ungesunde und stinkende Luft, das verdorbene Wasser und der von dem Verlust des Viehes unzertrennliche Mangel an Lebensmitteln natürlich Krankheiten verursachen mußte. Dergleichen haben sich hie und da, selbst in einer weiten Entfernung vom Feuer, z.B. im Gullbringu-, Borgarfiadar- und Myra-Syßla, besonders in dem ersten, durch einen in hohem Grade böartigen Scharbock zu erkennen gegeben. Das Vestriskaptafels-Syßla war der eigentliche Schauplatz dieser Krankheiten, und es sind nach dem Bericht der Prediger in sechs dortigen Kirchspielen, nemlich: Raulfafell, Krikiuboarklaustur, Buland, Ausar, Holmasel und Pyckvaboarklaustur, von Neujahr 1784 bis zum Ende des Juniimonats hundert und fünfzig Menschen hingerafft worden, einige vor Hunger und Elend gestorbene mitgerechnet. Diese Krankheit hat sich übrigens bey den Menschen, fast auf eben die Art wie bey den Thieren geäußert, und ist vornemlich von folgenden Zufällen begleitet gewesen. Kopf und Hals, Füsse, Lenden, Hüften und Arme schwellen entsetzlich, besonders äusserte sich der Geschwulst am Knöchel, am Knie und in den Gelenken, welche letztere, wie die Rippen, heftig verzerrt wurden. Ein schmerzhafter Krampf zog die Sehnen solchergestalt zusammen, daß die Kranken eine sehr krumme Figur und gar erbärmliche Stellung bekamen, die mit starken Spannungen auf der Brust und dem Rücken verbunden war. Die Zähne wurden los und von dem geschwellenen Zahnfleisch bedeckt, von welchem zuletzt grosse verfaulte Stücke von schwarzer und zuweilen blauer Farbe abfielen. Am Gaumen und im Halse, wie auch aussen an solchem, entstanden grosse, übelriechende Löcher, und endlich faulte die Zunge im Munde weg. Diese fürchterliche, wiewohl eben nicht ansteckende Krankheit wüthete im Winter und Frühling 1784 fast auf jedem Hofe in der Nachbarschaft des Feuers. Ausserhalb des Vestriskaptafels-Syßla aber äusserte sie sich nicht in so hohem Grade und mit so grauenvollen Zufällen. Viele von den unglücklichen Nachbarn des Feuers, die keine Hülfe oder Arznei bekommen konnten, mußten verhungern, da sie keine Speise genießen konnten, wenn sie auch da gewesen wäre. Zu Nupstadur, dem einzigsten Hofe in Flioticsverst, der noch im Frühjahr 1784 bewohnt war, soll die Krankheit alle Leute befallen haben, so, daß zuletzt nicht einer übrig war, die Kranken gehörig zu warten; ja, man erzählt, daß einige bereits gestorben waren und eine Zeitlang todt gelegen hatten, als man in Sida durch Reisende vom östlichen Viertheil, die zu Nupstadur, welches an der Landstraße liegt, anhielten, davon benachrichtigt wurde. Die Todten begrub man hier sowohl als zu Hörgsland und sonst vielerwärts an Ort und Stelle, da man keine Pferde und nur wenig gesunde Leute hatte, die Leichen nach den Kirchhörtern zu schaffen. Die Erde war im Winter und Frühjahr 1784 sehr tief zugefroren, und die wenigen gesund gebliebenen durch Hunger und schlechte Nahrung abgematteten Menschen hatte nicht Kräfte genug, zu so vielen oft auf einmal vorhandenen Leichen in der harten Erde die nötigen Gräfte zu machen. Man setzte daher sechs, sieben, acht bis zehn Leichen in einer Gruft bey, und die war oft nicht tiefer, als die Deckel der Särge eben mit Erde bedeckt werden konnten. Es ist begreiflich, daß die Luft bey einer solchen Art zu begraben, zumal an heissen Sommertagen, verunreiniget und den Menschen nachtheilig werden mußte.

Die Krankheit überfiel vornemlich diejenigen, welche Hunger und Mangel gelitten und ihr Leben mit dem Fleische des an gleicher Krankheit umgefallenen Viehes, Pferde nicht ausgenommen, alten gekochten Fellen und anderer dergleichen ungesunden und unverdaulichen Speise hingehalten hatten. Ich entsehe mich, mehrere Dinge, wovon es einem ekelt und schaudert, nahmhaft zu machen, die da zeigen könnten, wozu der marternde Hunger uns bringen kann. Einige Einwohner hatten den ganzen Winter über keinen Bissen gesunder und frischer Speise genossen, und das bittere, stinkende, von Asche und Schwefelstaub verdorbene Wasser trinken müssen. Doch haben etliche sich wieder erholt, nachdem sie im verwichenen Sommer neue Kühe und Eßwaaren von der Seeküste erhalten hatten, und die Felder nachher wieder mit gutem Gras und Kräutern bewachsen waren, wovon sie, als vom Sauerampfer (*Rumex acetosa*) und vom Löwenzahn (*Leontodon Taraxacon*) Suppe oder Mus kochten.

Über die Natur und Quelle dieser Krankheit habe ich bey dem Professor Kratzenstein Belehrung gesucht. Er leitet sie mit dem Professor Callisen von gleichen Ursachen her, und sie rechnen sie beyde zu einer Gattung. Des letztern Güte habe ich folgenden Unterricht zu verdanken: 'Die in Island in der Nähe des Feuers im Schwange gegangene Krankheit scheint nach allen damit verbunden gewesen Symptomen gänzlich von einer scorbutischen und putriden Art und völlig mit denselben Zufällen begleitet gewesen zu seyn, die man bey dem höchsten Grade vom Scorbut unter kalten Himmelsstrichen wahrgenommen hat. Sie hat ohne Zweifel ihren Ursprung von verdorbenen Lebensmitteln, verdorbenem Wasser und dem Mangel, dem die unglücklichen Bewohner dieser Gegend unterworfen waren. Es ist daher sehr natürlich, daß für diese Unglücklichen kein anderes Hülfsmittel statt findet, als eine verbesserte Diät, frische Vegetabilien und frische animalische Nahrung', welches auch die Erfahrung bestätigt hat.

Wie nun der Feuersausbruch solchergestalt Menschen und Vieh Krankheiten und den Tod gebracht hat, so hat er auch eine grosse Theuerung und Elend im ganzen Lande, ja eine Hungersnoth verursacht, wovon die Geschichte Islands kaum ein Beyspiel aufzuweisen hat. Der Landmann, der mit dem Vieh seine ganze Nahrung und den größten und besten Theil seiner zeitlichen Güter einbüßte, hatte, wie gesagt, nichts anderes, womit er den nagenden Hunger stillte, als rohe Häute, alte Felle und Stricke, die er kochte und aß. Manche haben in der äussersten Noth das wenige gesunde Vieh, das sie hatten, geschlachtet, und wenn solches verzehrt war, sich mit ihrer ganzen Familie nach der Küste hin begeben, den Bewohnern derselben zur unerträglichen Beschwerde und zum völligen Ruin. Denn indem das Oberland verlassen wird verschlimmert sich unmittelbar das Schicksal des Küstenbauers, der nicht mehr mit Eifer bey Sturm und Frost zum Fischen ausgeht, sobald er zu der harten, unverdaulichen und flüßigen Speise, die ihm seine Lebensart gewährt, keine fetten Waaren und andere kräftige Nahrung vom Lande bekömmt, und täglich das bloss Wasser ohne Molken trinken muß, welches alles, wie die Erfahrung von je her gelehrt hat, dem Fischer den Muth nimmt und ihm zum Fischen ungeschickt macht. Mangel an Häuten zu Seekleidern dürfte auch in einigen folgenden Jahren den Betrieb der Fischerey sehr hindern: denn fürs erste hat zwar das Viehsterben einen grossen Vorrath an Häuten geschafft; es ist aber auch eine ausgemachte Sache, daß die Felle von verhungerten und abgezehrten Thieren größtentheils unbrauchbar sind, und also jener Vorrath kaum zu dem im Lande gebräuchlichen Schuhen, geschweige denn zu Seekleidern, dienlich seyn dürfte."

(Philosophische Schilderung der gegenwärtigen Verfassung von Island, nebst Stephensens zuverlässiger Beschreibung des Erdbrandes im Jahre 1783 und anderen authentischen Beylagen, Altona 1786, S. 372-379)

Appendix II - On the Diseases of the Icelanders

"The poverty of the Icelanders, and the dispersion of their small community over so vast an extent of country, render it almost impossible that medical practitioners should obtain an independent subsistence in the island. To obviate, as far as possible, this evil, a small medical establishment is provided at the public expense ; consisting of a superintendant physician, who has the title of Landphysicus, an apothecary, and five subordinate medical men, who are stationed in different parts of the island. The physician and apothecary are settled in the vicinity of Reikiavik ; where a house, somewhat superior in size and accommodation to the common class of Icelandic habitations, is provided for their reception. Independently of this provision, and the use of some land annexed to the house, the Landphysicus has an annual salary of 600 rix-dollars, with the liberty to avail himself of the profits of any practice which his situation may afford. The present possessor of the office is Dr King, a native of Iceland, but educated at Copenhagen. Of the country practitioners, one is stationed on the southern coast of the island ; another on the eastern coast; a third on the northern ; and two in the western province. The reader will readily conceive how entirely destitute of medical assistance many parts of the country must be, when it is mentioned that some of these districts, subject to the care of a single individual, extend nearly 200 miles along the coast, with a breadth varying from ten to thirty miles. We had the opportunity, while in Iceland, of seeing two of the country practitioners ; both very respectable men, and well informed in their profession. One of them, Mr. Paulson, has already been noticed, as possessing a more extensive knowledge of natural history than any of his countrymen.

With the exception of three hospitals, in which a few incurable lepers receive gratuitous support, no medical institution exists on the island. These hospitals are maintained at the public expense; and in a method worthy of being noticed from its singularity. On a certain specified day, at that time of the year when the fishery on the coast is most abundant, and successful, every fishing boat in the island is required to contribute one man's share of the capture that has been made. A provision is added to the law, that if the number of fish taken by any boat on this day does not afford a share of five to each fisherman, the contribution to the hospitals shall be delayed, until the next time when the produce of a day's fishing equals or exceeds this amount.

In speaking of the diseases of Iceland, it will be necessary to allude only to those, which furnish any facts peculiar and interesting ; or which are more especially connected with the climate and mode of living among the inhabitants.

The diet of the Icelanders consists almost solely of animal food ; of which, fish, either fresh or dried, forms by far the largest proportion. During the summer they have milk and butter in considerable abundance; but of bread, and every other vegetable food, there is the utmost scarcity, and, among the lower classes, an almost entire privation. The want of cleanliness in the personal and domestic habits of the people has been frequently alluded to in the preceding pages. It is an evil incident to their situation ; the removal of which could probably only be accomplished by the sacrifice of other habits still more essential to their comfortable existence. As an effect of these circumstances in the mode of life of the Icelanders, cutaneous diseases, arising from a cachectic state of the body, are exceedingly frequent among them, and appear under some of their worst forms. Scurvy and leprosy are common in the island ; occurring especially in the districts of Guldbringè and Snaefell Syssels, and on other parts of the western coast, where the inhabitants depend chiefly upon fishing, and where the pastures are inferior in extent and produce. The scurvy (*kreppusott*) as it appears in Iceland, presents no remarkable peculiarity of symptom. The disease is observed to occur with greatest frequency at those periods, when there has been a deficiency of food among the inhabitants,

or when the snow and frost of the winter succeed immediately to a wet autumnal season. For its cure, a vegetable diet is employed, in as far as the circumstances of the Icelanders will allow of such means. Fruits of every kind are altogether wanting to them ; but some advantage is derived from the employment of the cochlearia (*Officinalis et Danica*,) of the trefoil (*Trifolium repens*,) of the berries and tops of the juniper (*Juniperus communis*,) and of the *Sedum acre* ; plants which are all indigenous in the island.

The leprosy of the Icelanders, (*Likthra*, *Holdsvеike*, or *Spitelska*,) exhibits in many instances all the essential characters of the genuine Elephantiasis, or *Lepra Arabum* ; and is a disease of the most formidable and distressing kind. Indolent tumours of the face and limbs are generally among the first symptoms of the complaint, attended by swellings of the salivary, inguinal, and axillary glands. The nostrils, ears, and lips are progressively affected with swelling and deformity. The skin over the whole, or different parts of the body, becomes thick and hard ; sometimes exhibiting a shining or unctuous surface, sometimes one rough and scabrous, which at a more advanced period of the disease, displays numerous cracks or fissures. The senses are usually much enfeebled ; and anaesthesia of the extremities generally occurs. The voice assumes a peculiar hoarseness and nasal tone, frequently with swelling of the tonsils, but without any hindrance of deglutition, until the disease has made great progress in the habit of the patient : the breath and perspired matter are extremely fetid ; and the hairs and nails frequently fall off. The tumours in different parts of the body gradually pass into malignant ulcers, which discharge an acrid, unhealthy matter. In this state the patient often lingers during a long time ; or where the disease has a more speedy termination, all the symptoms are rapidly aggravated, and he is carried off in a state of extreme debility and wretchedness.

When it is considered how frequently unsuccessful the treatment of this disease is in more auspicious regions, it will not excite surprise that in Iceland the attempt at cure should generally be unavailing. Where, from the situation of the patient, medical assistance can be obtained, laxatives, diaphoretics, and issues, or sometimes even venesection, are employed in the earlier stages, or with a prophylactic view. The indigenous plants which the natives employ as remedies, are the Juniper, the *Vaccinium Myrtillus*, the *Rhodiola-Rosea*. and the *Dryas Octopetala* ; the latter of which particularly grows in great abundance on the island. These remedies, however, appear to be of little avail in relieving any of the urgent symptoms of the disease.

It does not appear that any distinct record exists in Iceland of the first appearance of the leprosy in this country. The Chevalier Bach, in his letter to Dr Van Troil on the subject, thinks it probable that the disease was brought into Iceland from Asia or the South of Europe, at the time of the Crusades ; in which he asserts that these islanders bore a part with the other nations of Europe. From the Ecclesiastical History of Iceland, it appears that the latter statement is not well founded ; but though not participating in the holy wars, the Icelanders had at this period an intimate connection with the European continent ; and the disease, of which we are speaking, when once introduced, would readily be kept up, partly by its contagious character, principally perhaps by the food and personal habits of the people. In the rest of Europe, it has gradually disappeared, in consequence of the progressive improvement in the modes of living among every class of society.

The ravages committed by the small pox in Iceland have been such as to render this disease important even in the political history of the island. Introduced from the continent at different periods, and these in general distant from each other, it has spread rapidly, and under its most virulent form ; producing effects almost unexampled in the history of this dreadful disease. The most remarkable instance of this kind occurred in 1707 ; during which year the mortality

amounted, according to the most accurate estimate, to about 16,000 souls ; more than a fourth part of the whole population of the country, at that period. Several similar instances are recorded in the history of Iceland, though none attended with effects so extensively disastrous. A few years ago, the vaccine matter was introduced into the island from Denmark ; but owing to the smallness of the population, and its dispersion over so wide a surface, this was soon lost again ; and at the time of our arrival, we found the practice of inoculation entirely suspended. In the contemplation of this circumstance, we had taken out with us a few vaccine crusts, with the design of recommending the method lately proposed by Mr. Bryce. Almost immediately on our arrival, we inoculated several children at Reikiavik, and afterwards in other parts of the country; and having a communication with the Landphysicus on the subject, we had the satisfaction of knowing, before we returned to Britain, that the vaccine crust had found its way into every part of the island. The adoption of the plan of inoculating from the crust will doubtless secure to the inhabitants a permanent continuance of this blessing.

The Icelanders have occasionally suffered much from the measles, as well as from the small pox ; the epidemic being attended with inflammatory affections of the chest. In 1797, six hundred people were carried off by this disease.

Syphilis cannot be said to exist in Iceland. Single cases have sometimes occurred from communication with foreigners ; but the disease has always been intercepted before it made any progress in the country.

Psora is an almost universal complaint in Iceland, appearing indiscriminately among all classes of the inhabitants. No discredit is attached to it, nor does it seem that any means of cure are attempted, though the most efficacious remedy exists in so great abundance in the country.

It would seem that scrophulous affections are not of frequent occurrence in the island.

Inflammatory visceral affections are very common among the Icelanders. The variable nature of the climate, and the constant exposure to wet and cold which is incurred in the occupation of fishing, give a strong tendency to pulmonary complaints ; and out of the annual number of deaths in the island, a very large proportion are referable to this cause. This fact was ascertained from the examination of certain statistical registers, which are annually drawn up by the priests of the several parishes, and transmitted to the Bishop at Reikiavik. In these pulmonary affections, and especially in cases of Phthisis, the Lichen Islandicus is much employed by the natives ; and possesses a reputation among them, which the experience of its effects in other countries would scarcely seem to warrant. As a demulcent remedy however, it probably in some degree alleviates the symptoms, and, as an article of diet, in such cases its use may certainly be advantageous.

Inflammatory affections of the abdominal viscera are likewise very common among the Icelanders ; chiefly perhaps in consequence of the peculiar nature of the diet to which they are accustomed. It is possible also that a disposition may be given to these complaints by the treatment of the children in their early infancy. A mother in Iceland seldom suckles her child ; but nourishes it from the time of its birth, with cows or sheep's milk, which the infant sucks from a piece of moistened rag, or a sponge. Where from extreme poverty, or other circumstances, milk cannot be obtained, a little fish or flesh meat, rolled up in cloth and linen, and put into the infant's mouth, is the substitute most commonly employed. The diet of the Icelanders likewise gives much disposition to worms ; and the ascarides are observed to be particularly frequent.

The climate and the occupations of the people, particularly that of fishing, render rheumatic affections very common. It is said that gout also occasionally occurs ; but it may be doubted whether it is not some modification of rheumatism which obtains this name.

Hypochondriasis is a frequent complaint among the natives of Iceland ; induced probably by the physical circumstances of their situation, and the long confinement to their habitations, which is necessary during the winter season. Yet the general temperament of the Icelanders does not appear to be a melancholic one, and the vivacity of their manner frequently forms a striking contrast to the wretchedness which their external condition displays.

Besides the diseases which have already been noticed, I had the opportunity, while in Iceland, of seeing cases of Epilepsy, Hysteria, Amenorrhoea, Menorrhagia, Asthma, Icterus, &c. No case of idiopathic fever, either intermittent or continued, occurred to my observation. With respect to intermittents, however, I was informed that they occasionally appear among the inhabitants under a well marked form ; an effect no doubt of the vast extent of bogs and marshy ground, which are found even in the most populous districts of the island.

A singular complaint remains to be noticed, the effects of which, though limited to a small spot, are eminently disastrous as far as they extend. This is the disease, called *Ginklofe* by the Icelanders ; the Tetanus or Trismus Neonatorum of medical writers ; which invades children at a very early age, and almost invariably proves fatal in its event. It occurs very rarely, if at all, on the mainland of Iceland ; but is confined principally to the group of islands, called Westmann-Eyar, situated on the southern coast, of which a description has already been given in the Journal, p. 255. The population of Heimaey, which is the only one of these islands that is inhabited, does not amount at present to 200 souls, and is almost entirely supported by migration from the mainland; scarcely a single instance having been known, during the last twenty years, of a child surviving the period of infancy. During a great part of the year, the island is wholly inaccessible in consequence of storms, currents, and the nature of the coast. The inhabitants are therefore left almost solely to their own resources. Their chief article of food is the sea-fowl, called the Fulmar, which they procure in vast abundance ; using the eggs and flesh of the bird, and salting the latter for their winter food. The destructive effect upon the fishery around these islands, by the great volcanic eruptions in 1793, has before been mentioned. Of vegetable food the inhabitants have none, and there are only a few cows and sheep on the island.

The distressing consequences of this disease led the Danish government to give an official direction to the Landphysicus of Iceland, to visit the Westmann Islands, for the purpose of investigating its nature and causes. This gentleman went over to the islands during the summer of 1810, and remained three weeks on the spot. Though he did not himself see a case of the disease, he obtained all the principal facts connected with it from the priests, and those of the inhabitants who had had children. The symptoms of the complaint are briefly these.

Very soon after birth, strabismus and rolling of the eyes are observed ; subsultus tendinum occurs ; and the muscles of the back are often drawn together and stiffened, evidently by incipient spasm. These appearances infallibly denote the approach and event of the disease. Having continued during a period varying from one to seven days after birth, trismus generally comes on, sometimes attended by Opisthotonos, which is strictly called the *Ginklofe*, occasionally with Emprosthotonos, to which the name of *Klums* is given by the natives. The trismus present impedes deglutition, and the paroxysms becoming more violent, the infant is speedily carried off. When the rare event of a favourable termination occurs, it is

portended by a critical diarrhoea, or by an exanthematous eruption, with the evacuation of the meconium.

The following Table, which includes a period of twenty- five years, shews the mortality consequent upon this disease in the Westmann Islands ; and exhibits also the days upon which death has happened.

Children.	Days.	Children.	Days.
1 . . .	lived ...2	18 . . .	lived ... 9
2	3	10	10
14	4	2	11
16	5	1	12
22	6	1	13
75	7	5	14
16	8	1	21

It will be seen from this Table, that the number of deaths on the 7th day greatly exceed those on any other ; and also that they are more frequent on the 14th day, than on the days immediately preceding or succeeding it. From the proportion which these cases of fatal event bear to the whole population of the island, it is probable that few, if any, instances of recovery have occurred, during the period included in the Table. No methods of cure have hitherto been resorted to by the inhabitants.

This disease is well known to prevail in other parts of the world ; and has been particularly described as it appears in the West Indies, and in the island of Minorca. It exists also in Switzerland, and in some northern districts of Scotland ; especially in the island of St Kilda ; the inhabitants of which, in their diet and mode of life, much resemble the natives of the Westmann Islands. The exciting causes are involved in much obscurity. It may be presumed, however, that they must vary considerably, when the disease appears in countries so widely different with respect to climate, and the situation of the inhabitants. Its occurrence in the Westmann Islands may reasonably be supposed to have some connection with the extraordinary diet of the natives ; and this is the more probable, as it appears that the complaint has been much more frequent, since their fishery was destroyed by the volcanic eruptions in 1733. Independently of any effect which the peculiarity of the mother's constitution may have upon her offspring, the practice of giving to the infant a strong and oily animal food almost immediately after birth, will necessarily create irritation in the bowels, and dispose to spasmodic affections. Dr Klog, in some remarks he gave me on this subject, attributes much to the effects of the sea air, and of a moist atmosphere ; but had these causes any considerable influence, we might expect that the disease would be more frequent in different parts of the world, than is actually found to be the case.

The age which the Icelanders usually attain presents nothing very remarkable in either extreme. From the Table of Population, given in a preceding part of this volume, it appears that in 1801, when the number of inhabitants was 47,207, there were 41 persons between the ages of 90 and 100 ; 443 between 80 and 90; and 1698 between 70 and 80. The number of females was 25,371 : of males, only 21,746. The longevity of the females exceeds considerably that of the males ; owing no doubt to their less exposure to the severities of labour, and the hardships of the climate. Of the 41 persons between 90 and 100, 35 were females ; of those between 80 and 90, 285 were females, while the number of males was not more than 158. A comparison of facts would probably prove, that the longevity of the Icelanders rather exceeds, than falls short, of the average obtained from the continental

nations of Europe.

The Icelanders are in general of a tall stature ; arising, however, rather from the length of the spine, than of the limbs : the head is of the middle size : the countenance open : the complexion exceedingly fair, and among the women, often very florid. The hair is almost universally of a light colour, and seldom curled. Corpulency is rarely observed among the natives of the island."

(Sir George Stewart Mackenzie, Travels in the Island of Iceland during the Summer of the Year 1810, 2. ed., Edinburgh (1812), p. 397-408)

Appendix III - Review of: J.C. Schythe, Hekla og dens sidste Udbrud, den 2den September, 1845

Hekla og dens sidste Udbrud, den 2den September, 1845. En Monographi af J. C. Schythe. (Hekla and its latest Eruption, on the 2nd of September, 1845. A Monograph by J. C. Schythe.) 8vo. pp. 154. With 10 lithographed plates, and 2 maps. Copenhagen, 1847.

"About two years ago, some imperfect notices appeared in the English journals, to the effect that the long slumbering volcano of Hekla, in Iceland, had again woke up into activity. From the Orkneys and Shetland Islands accounts were also received, that a shower of fine volcanic sand or dust, had fallen in September, 1845, in these remote portions of the British dominions, and that this phenomenon was probably occasioned by the outbreak of some volcano in the northern seas. Naturally enough, however, the subject attracted but little attention, except from a few scientific men, and the public was perfectly well satisfied with a representation of Mount Hekla in eruption, which appeared in one of the illustrated newspapers, where that volcano was depicted as a conical rock on the borders of the ocean, belching forth fire and smoke, and sending a copious stream of lava directly down into the waves which boiled around its base. Inaccurate and absurd as this delineation undoubtedly was, we will assert that it was fully commensurate with the amount of actual knowledge possessed by the majority of the reading English public, in regard to the true position and character of this remarkable volcano, and of the island in which it is situated. Iceland is indeed classed by our countrymen in the same category as Spitzbergen and Nova Zemlaia; it is to them a frozen land clothed in perpetual ice and snow, where no grass springs, and no bush can exist, and on whose southern shore an ever burning mountain flames up, as a beacon to guide the mariner, who shuns the inhospitable coast. The perils of a long sea voyage, the difficulties of an almost unknown language, and the very want of information respecting this remote island, have caused Iceland to remain more or less of a "terra incognita," while every nook and cranny of the continent of Europe have been explored by our adventurous countrymen. We do not possess a single good work on the physical geography of Iceland, such as a hundred years ago was published in Denmark by the diligent investigators, Olafsen and Povelsen. We have, indeed, scattered and imperfect notices of the natural phenomena it presents, in the travels of Sir George Mackenzie, of Dr. Hooker, and of Dr. Henderson, and one or two more recent observers: while, for its remarkable history, both literary and civil, we can only refer to the volume on Iceland, Greenland, and the Faroe Isles, published eight years ago in the Edinburgh Cabinet Library. Few indeed, then, are aware, that this northern land is not the ice-bound country that it is generally represented, that the flocks and herds of the Icelander afford no contemptible proof of its general prosperity, and that the numerous warm springs, and the internal volcanic fires smouldering beneath, impart to the soil a degree of fertility that could not otherwise be looked for so near the Arctic circle.

The volume now before us, can be regarded only as a contribution to the geology and physical history of Iceland; but it is evidently the production of a competent and scientific observer. Mr. Schythe had ample opportunities for personally studying the volcano and the surrounding districts, shortly after the eruption of 1845. With the true spirit of an ardent naturalist, he remained for weeks in the neighbourhood of the mountain, and wandered day after day amid the most hideous solitudes, with the firm resolve of seeing all for himself, and of not trusting to the imperfect or exaggerated descriptions of others. In his zeal, however, to complete the survey of the volcano, and to describe the phenomena of the eruption, he has omitted altogether those details of personal adventure, and those sketches of character and of scenery which render a scientific work readable to the unscientific public. His book is indeed a pure monograph of Hekla and of the eruption, and we have found no little difficulty in reducing the original scientific details to the standard of the general reader's capacity. But while this dryness of tone detracts from its merit as a popular work, it does not diminish its value as a faithful record or exposition of the present state of the mountain, after the throes and convulsions which it has lately endured.

The first chapter is devoted to the general description of Hekla and its environs. The geological formation of this district is given at some length, but its principal features are,

"That a broad belt of volcanoes, running from south-west to north-east, separates the stratified trap formations of the east and west portions of Iceland. It might be imagined, that the crust of the newly upraised island had been thinnest in the centre, and that a huge rent had severed in this direction, the whole island into two portions; while within this mighty chasm, still in some parts not quite filled up, the volcanic fires have found constant vent."

Among these outlets of the pent-up forces, Hekla stands pre-eminent in history, though many of the Icelandic volcanoes exceed this mountain in height, and many, too, have caused more terrible devastations. Thus, in 1783, the Skaptar Jokul, to the north-east of Hekla, burst into violent eruption, and for two months continued to pour forth such immense torrents of lava, with showers of heated ashes and of pumice, that the pastures all around were entirely destroyed, and hundreds of human beings, with thousands of sheep and cattle, died of hunger and disease.

The volcano of Hekla is situated in the southern part of Iceland, between two of its principal rivers, the Olfus-aa, and the Markar-flíot. From the southern coast, a broad plain stretches up in this district towards the interior. Gradually, as we advance towards the north, we find the level surface broken by spurs from the adjacent mountains, and at length it changes to a swelling upland of irregular shape, traversed by numerous ancient streams of lava. Here we observe numerous valleys and depressions, clothed with rich green vegetation, but separated by wide tracts of brown or black volcanic sand. This sand, or volcanic ash, is indeed the scourge of many districts in Iceland.

"The enormous quantities of sand and ashes, which the volcanoes to the east of this plain have thrown out, are carried by the east and north winds in clouds over this level district. The sky on such occasions becomes obscured, and all nature is wrapt in a brown mist, through which the sun's rays struggle with a faint red light. The acrid powder floating in the atmosphere, causes such violent smarting in the eyes, that it is nearly impossible to walk out in the open air, while the finer dust makes its way into the interior of the cottages, destroying the articles of food, and rendering the milk unfit for domestic use." - (p. 5.)

The volcano of Hekla is situated about thirty English miles from the coast, between the forks of two rivers, the East and the West Rang-aa, the course of both of these streams being generally south-west.

"If we ascend from the confluence of these two rivers towards the mountain, the ground is observed to rise gradually, one lava stream covers the other, but each succeeding stream has stopped short in its progress over the preceding one, so that we ascend step by step, or by a succession of terraces, to the volcano itself. At first the growth of grass is rich and good, but soon sand and ashes predominate, and the absolute sterility of large tracts is only broken by a few prominent sandhills, which support a low scrubby dwarf vegetation of *Salix arctica*, and are held together by the strong roots of the *Elymus arenarius*. Mounting up still further, all traces of vegetation vanish, save when a slight covering of moss varies the surface of the rugged and most recent lava streams. Water too becomes scarce, for the porous nature of the lava allows the surface water to percolate through its loose texture, to issue again in copious streams from the lower edges of the lava courses, or 'Röins,' as they are termed in Iceland. Higher still, perpetual ice and snow reign pre-eminent, especially in the almost unknown districts to the north-east of Hekla, but these too are abundantly supplied with warm springs, and with jets of steam and of hot air, especially in the district between Hekla and the Markarflíot."

The present height of Hekla is scarcely 5,000 feet; the trigonometrical survey of the Lector Gunlogsen has established it at 4,956 feet (Danish.) It is well known, however, that the height of volcanoes is constantly liable to change; the tremendous forces frequently in operation on the summit may destroy the higher peaks; and again, at another time, may upraise from the bowels of the mountain scoriae and lava to a height greater than any that had hitherto existed. But it is in the years succeeding an eruption that the greatest alteration takes place. Each new outbreak, rending the highest portions of the top, accumulates a vast heap of loosely aggregated masses on the summit and on the sides, where they often hang half suspended on the acute angle of the descent, till, loosened by the rain, and by the ever advancing process of their own disintegration, they roll down the steep declivity to the base. In this way the general height of the mountain is constantly lowered, till a fresh eruption piles up new masses on the top. Mr. Schythe estimates the diminution of the height of Hekla, subsequent to the last eruption, to be nearly 100 feet; but he has some doubts as to the accuracy of the former trigonometrical measurements. The mass of the mountain is mainly composed of lava, scoriae, and ashes, and in most cases, the lava is remarkably loose and porous in texture. Portions of more solid lava may often be observed impacted in a breccia of tufaceous matter, with imperfect crystals of christianite.

The general direction of the Icelandic volcanoes, from south-west to north-east, is particularly well marked in the elevation of Hekla, which is prolonged to the south-west as far as the Selsund's Field, while the lower grounds are covered with vast streams or Roins of lava, of which the successive inroads have, within historical periods, gradually destroyed a rich pasture ground that formerly extended up to the very base of the great volcano itself. Three isolated portions of these farms still remain; but they suffered severely in the late eruption, and by another will be probably overwhelmed.

On the east and north of Hekla, desolation reigns pre-eminent. Enormous streams of lava cover the whole and, while numerous Raudöldur, or "red craters" of former eruption, attest the activity of the volcanic fires in this hideous solitude. The name of the Raudöldur, or "red crater," is sufficiently expressive, and corresponds to the "Monte Rosso" of the Italian volcanoes. Only one of these diminutive craters is to be found on the western side of Hekla. It is about two hundred feet in height, and consists of a wall of tile-red slaggy lava, surrounding a deep kettleshaped crater with nearly perpendicular sides. This wall is complete, excepting

on the north-west side, where the crater has been split from top to bottom, and a large portion of it carried away by some tremendous explosion.

The age of the different lava streams of Hekla is best determined by the amount of vegetation and of mould that they bear upon the surface. The most ancient are covered with a depth of soil sufficient to support a fair growth of grass. On those of later date, the grass is thinly scattered; but a spongy moss renders the footing tolerably secure, though it often, at the same time, hides treacherous rents and fissures in the lava. Finally, the sharp and rough masses of the newest lavas, are not only totally bare of vegetation, but present so rugged and broken a surface, that an active man cannot make his way over them at a greater rate than half an English mile per hour. It is not merely here the unevenness of the surface which obstructs the traveller's progress, but the light and porous lava breaks treacherously under the slightest pressure, and precipitates the adventurer into deep fissures which before were concealed from his sight. Long, however, before grass appears on the recent lavas, vegetation in the shape of dwarf birch wood, "Birkekrat," has appeared in some of the more sheltered spots. The Woods of Selsund are well known in Rangaavalle Syssel, though the birch rarely rises to the height of a man; but, to the Iclander, the smallest portion of fire-wood is of the utmost value. No inconsiderable part of the income of the owner of Selsund farm is derived from the cuttings of his forests for charcoal, a species dollar (about four shillings English) being obtained readily for a small horse load of this material, to be sure, this is not paid in hard cash, which is at all times a very scarce commodity in Iceland, but is bartered for twenty fish at four shillings each.

On the north side of the Hekla range, there is a stream of lava which cannot be traced to the craters of that mountain, and has evidently flowed from some volcanoes in the interior of the country. Some of the streams of lava in this district, appear to have been consolidated under very high pressure, and our author thinks it probable, that at one time the sea extended as a great inlet over the present Rangaavalle Syssel. The great rivers of this district have, in some cases, cut their way through pre-existing streams of lava. The most ancient lavas of Hekla are completely identical with those of the most recent date, as regards their structure, and the few minerals they contain.

In traversing the vast "Röins" on the west of Hekla, the traveller observes huge black furrows running parallel to the course of the lava stream, and separated by rugged crests of the most distorted forms. Where the lava current has been confined between two cliffs, (as in the gorge below Selsund, opposite to the now ruined farm of Naefrholt), it rises high against the perpendicular walls on either side; for the lateral portions are arrested in their course, and cooled, sooner than the central and more fluid parts, which continue their downward progress. Many of our readers may, no doubt, have witnessed the advance of a stream of lava from the craters of Vesuvius; but, by the public at large, very erroneous ideas are entertained as to the rapidity of its advance and its general appearance. A lava stream has *not* the aspect of a fiery torrent, dashing along with the impetuosity of a river that has newly burst its bounds, and overwhelming all things, living or dead, in its irresistible course. The progress of a current of lava is often slow, excepting when it is highly fluid, and rolls over some steep declivity. The greater the distance from the crater, the more slowly does it advance, as the mass constantly tends to cool; but, on the other hand, the stream is frequently augmented by fresh eruptions. In the broad day light, a lava stream shows little or no signs of fire, so rapidly does the outer crust form from the cooling effects of the atmosphere. Across a gentle incline, it moves very slowly, and, to use a most humble simile, it resembles not a little a huge ash heap in slow and gradual progression. We have often stood beside a lava stream in the crater of Vesuvius, so near that we could thrust our walking-stick into the moving mass, from whence we withdrew

it with the end in flames, though no fire could be seen on the external surface, amid the loose heaps of blackened scoriae. At night, however, the scene is different. Wherever the stream rolls over a steep incline, the outer crust is broken, and the fiery torrent beneath comes into view. When the lava is pouring fast out of the crater, the bright ruddy glow of the melted matter forms a long line of fire winding down the sides of the mountain, while the huge masses thrown high in air by the furious outbursts of steam, resemble vast rockets in their flight through the darkened atmosphere. But perhaps the most fearful and extraordinary spectacle, is that presented by the fiery torrent when it encounters in its course a deep and rapid river. The conflict between the two opposing elements then becomes tremendous. The water is raised in its bed by the cooling and consolidation of the lava pouring into it, and overflows the adjoining lands; while, on the other hand, the melted masses convert the water into steam, with a most hideous tumult and noise. In the great eruption of the Skaptar Jokul, in 1783, the burning stream forced its way to the torrent of the Skaptaa at the point where its waters were precipitated into an abyss of unknown depth and of great extent. For a whole day, the fearful conflict of the elements lasted in this seething cauldron. Huge masses of flaming rock were seen swimming in the boiling water; the fish were thrown out, dead and parboiled, on to the land, while the explosions of steam projected large bodies of water into the air, with a sound resembling the discharge of the largest artillery. Fresh torrents of lava continued to pour in, and after a night of fearful tumult and terror, the deep abyss was in the morning completely filled, and the waters of the Skaptaa inundated the surrounding farms.

The third chapter of our author's monograph is devoted to the history of the former eruptions of Hekla, from the first recorded outbreak in 1104, to the present time. The Icelandic historians have supplied ample dates and details of these eruptions. The most fearful and the most disastrous, were those of 1300, of 1693, and of 1766. On the 13th of July, A.D. 1300, the whole mountain was, as it were, rent from top to bottom, huge masses of burning stone were projected into the air amid the column of smoke and ashes that rose from the crater, and fell at so great a distance, that the roof of the farm of Naefrholt, six miles from the mountain, was set on fire by them; while a hideous darkness covered the plains, so that none could find their way, and no boat could put to sea to prosecute the fishery.

The eruption of April 5th, 1766, commenced at four a. m. with the appearance of an enormous column of ashes and smoke on the summit of the mountain, intermingled with glowing scoriae and constant gleams of forked lightning, while the most fearful sounds issued from the bowels of the mountain. The column of ashes, driven by a south-easterly wind, inclined towards the north-west, and fell in such vast quantities to the earth, that the surface was covered to the depth of an ell in the immediate vicinity of the volcano. In two hours' time five farms in the neighbourhood of Hekla were laid entirely desolate by the "rain of ashes," while the rivers Thiorsaa and Rangaa, bore on their waters such enormous quantities of scoriae, that they impeded the progress of the fishing boats at a considerable distance from the land. On the 9th of April two craters could be seen pouring out vast quantities of lava, and one of these is supposed to have been the Raudoldur or red crater on the west side of Hekla, for this remarkable conical hill is not noticed by Eggert Olafsen in his visit to Hekla in 1753, though from the course he took in ascending the mountain, it could not have escaped his observation, if it had then existed. On the 23rd of April 1766, the height of the column of ashes and smoke was ascertained by measurement to be not less than sixteen thousand feet, and on previous days it had appeared to attain a still greater elevation. Counting from the first recorded eruption, we find that Hekla's periods of repose have been extremely unequal, they vary from six to seventy-four years. We subjoin these intervals in the order of their occurrence from the year 1104, viz., 53 years, 48, 16, 72, 6, 41, 48, 47, 74, 44, 24, 19, 22, 17, 57, 73. It has not been found that the length of the periods of repose have exerted any peculiar influence on the

violence of the eruptions; for the great outbreak of the year 1300, took place only six years after that of 1294.

Our author next briefly notices the various ascents of Hekla that have been made by scientific travellers, from the first visits of Eggert Olafsen and Biarno Povelsen in 1753, to his own repeated observations from 1839 to 1846. The clouds, fog, and chilling winds on the summit of the volcano, have unfortunately proved most serious obstacles to scientific investigators on these occasions, save in the single instance of Eggert Olafsen's visit, and of some of our author's repeated and arduous expeditions in the same quarter.

The gradual cooling of the crater after the eruption of 1766, may be traced in the records of the various travellers, who have since, at successive periods, visited the summit of Hekla. Thus Banks and Solander, in 1772, found so hot a vapour rising in many places from cavities on the mountain, that they were unable to approach these to ascertain their temperature by the thermometer; while Thienemann in 1821, and Paul Gaimard in 1836, and lastly, our author himself, in 1839, observed no signs of subterranean heat, save in one spot, where a small jet of steam raised the thermometer to '10° centigrade.'

The fourth chapter of Mr. Schythe's book will undoubtedly present the greatest attractions to the general reader, as it embodies the history of the recent eruption of 1845-46, as collected and carefully detailed by one thoroughly competent for the task. From the slight jet of steam that Mr. Schythe had observed upon the mountain in 1839, he had ventured to predict, that the subterranean forces were again in operation, and that ere long, a serious outbreak might be expected. But for five years longer the volcano remained perfectly quiet, and it was not till the year 1845, that the peculiar condition of the atmosphere excited some little alarm among the inhabitants, as from ancient tradition it was well known that such alterations were commonly the precursors of an eruption. The winter of 1844-45, was remarkable for its extraordinarily mild character; the grass shot forth as early as the month of April, and the unvarying dryness of the summer was eminently favourable for the hay harvest. The medium temperature of the spring of 1845, was more than two degrees (centigrade) above that of the fourteen previous years. The barometer showed during this period extremely little variation. As the summer advanced, it was observed that less snow than usual lay in patches on the mountain, but the mild spring, and the very dry months that succeeded it, may perhaps account for this, without supposing an increase of subterranean heat. In the beginning of August it was universally remarked, that a great decrease suddenly took place in the quantity of the milk yielded by the sheep and cows, especially in the highly volcanic districts to the east of Hekla. Our author suspects that acid vapours may at this period have been rising from the earth, and tainting the grass, for such emanations were detected by him in abundance after the eruption. It was observed too by the inhabitants of the Rangaa valleys, that the numerous hot springs and vapour jets in the Reykiadal, near the Markar-fliot, had increased during the last year both in number and in power, but this rather tended to allay their fears of an eruption, as they hoped that in this way the subterranean fires of Hekla had found vent. Our author, however, regarded it rather as an indication that the subterranean heat was approaching nearer to the surface. The former eruptions of Hekla, and of other of the volcanoes of Iceland, had been frequently preceded by earthquakes, but on this occasion no such phenomena were observed, save two slight shocks at Reykiavik during the winter.

We shall avail ourselves, in describing the eruption of September 2nd, 1845, of the words of Mr. Schythe, though we could have desired a little more life and vivacity of colouring in his descriptions.

"The dry weather which had lasted during the whole of the spring and autumn of 1815, was succeeded on the 22nd of August by heavy rains, which continued during the rest of the month. September came in, dark and gloomy, with occasional drizzling rain, while a fearful stillness prevailed in this usually stormy part of the country. Such was the state of the atmosphere on Thursday, the 2nd of September, when after seventy-nine years of repose, the longest interval of quiet yet on record, the eighteenth eruption of Mount Hekla commenced. Dark heavy mists obscured all the mountain ranges on this eventful morning, but about nine a.m., the attention of the inhabitants of the neighbouring farms, was attracted by dull booming sounds like distant cannon shot, from the eastern range of Hekla, and at the same time, by some, a slight tremulous motion of the earth was observed. Many, who at that hour were proceeding to the fields on foot or on horseback, believed that what they heard was thunder, and others thought that a heavy storm was approaching from the east. But the ceaseless succession, and loud tone of the detonations, soon dispelled these ideas, while Hekla and its whole range still continued wrapt in impenetrable mist. This fog however seems to have been less dense towards the east of the mountain, for the inhabitants of that district saw, about ten a. m., a dark cloud rising over the range, to the west and north-west of their position, and at the same time they heard with awe and terror, a constant noise as of a heavy cannonade, from the same quarter. All doubt respecting the origin of these sounds was however dispelled, when, about eleven in the morning, the dark cloud which had now spread itself over the whole horizon, began to rain down a thick shower of ashes and grayish scoriae about the size of swanshot. (Raevehagl). Lower and lower did the dense canopy descend upon the earth, till, at midday, the darkness was as that of the obscurest winter night, and they who were surprised out in the fields, had the greatest difficulty in regaining their dwellings. After an hour's lapse, a sort of twilight reappeared, as when morning first breaks in the east, but day was not fairly restored till about three p. m. The shower of scoriae continued for about an hour longer, and was succeeded by a fall of black volcanic sand, which lasted till mid-day on the 3rd, by which time the ground was covered with sand, scorias, and ashes, to the depth of an inch and a half." - p. 51.

On the western side of Hekla a similar obscurity prevailed, but no ashes fell in this quarter, as a strong northwest wind was blowing. The darkness over this district was caused by the sun's rays being intercepted by the column of smoke and ashes that rose from the mountain; it was, in fact, a novel sort of eclipse of the sun.

"Some of the farmers in this district, hastily consulted their almanacks, believing it to be a true eclipse of the sun, and such indeed it was, but not one predicted in the almanack."

It is curious that the first outburst of the volcanic forces was not accompanied with louder detonations, for in many places these were so indistinctly heard, that they were regarded as distant thunder, or as the noisy ebullitions of the ever active Geysers. Still more singular is it, however, that these detonations of the volcano were heard in the most distant quarters of the island. At Kirkiuvogr, 24 miles from Reykiavik, it was thought that a cannonade was going on at the latter town; while still further off, at Stappen, under the Sneefield Jokeln, it was believed that a whale of large size had got on shore, and was lashing his tail upon the rocks. Even in the desolate isle of Grimsey, on the north coast, booming shots were heard at three p.m., on the 2nd of September, and were supposed at the time by the inhabitants, to be cannon fired by the French cutter, cruising in that fishing ground.

The extent over which actual earthquakes were observed at the time of the eruption, may be comprised in two elliptical lines, extending about 24 miles in direct length, by about 10 at the greatest breadth between these, and thus enclosing the whole range of Hekla, from south-west to north-east. A slight tremulous motion of the earth was, however, observable at much greater distances.

When the sky cleared about three in the afternoon of the 2nd of September, the huge column of smoke and ashes rising from the summit of the volcano, became for the first time apparent, and continued distinctly visible till night set in, about half-past seven.

"Just as the darkness closed, a louder detonation than any yet heard, spread terror all around, and the numerous dogs that attend on an Iceland farm, fled howling from their master's dwellings, far away into the district of Holterni, from whence many did not return for the lapse of a week. Night now fairly set in, and a bright flame rose high in the air from the volcano, while huge masses of glowing scoriae shot up to an enormous height, and a stream of red molten lava appeared flowing down the western declivity of the mountain towards the plains."

The effects of the volcano on the rivers in the immediate western vicinity of the range, were sufficiently remarkable. The waters of the western Kangaa diminished very sensibly about mid-day on the 2nd, probably in consequence of the scoriae and ashes that fell into and obstructed its upper course; but a few hours later its stream suddenly rose to an unprecedented height, and bearing on its surface huge masses of scoriae, it swept with irresistible force onwards to the ocean. At the same time the temperature of the water became so much elevated, that the hand could not be kept in it for a moment, and hundreds of trout, in a half-boiled condition, were cast out upon the banks. But ere the night had fairly set in, the river had returned within its limits, and its waters in a short time regained their clear pellucid character.

On the morning of the first eruption, the atmosphere around the mountain was perfectly still, but from the rapidity with which the huge column of ashes travelled towards the south and east, it is evident that a powerful north wind blew in the upper regions of the air, shortly after the volcano burst forth. We have evidence that the shower of ashes and of volcanic sand extended far out to sea in this direction. The sloop *Helena*, Captain J. Larsen, was, at twelve o'clock a. m., on the 2nd of September, in 60-58 north latitude, and 9-43 longitude west from Greenwich. At nine p. m. on that day, a heavy cloud came driving over the ocean, and covered the ship's decks and sails with dark ashes, while a strong wind blew from the north-west. It follows, therefore, that in the space of less than twelve hours, the ashes from Mount Hekla passed over a distance of about 360 English miles, giving a velocity of above 30 English miles per hour. The showers of ashes fell in the Faro isles at the same hour, and in Shetland early on the morning of the 3rd of September.

At the period of the year when the eruption took place, the sheep, which form no inconsiderable portion of the riches of the Icelanders, had not as yet been brought in from their summer pastures, and thousands of these animals were grazing on the high ranges around the volcano. The utmost anxiety was necessarily felt regarding their fate; but on the evening of the first day they arrived in troops at the several farms, with their fleeces blackened with ashes, and their flesh severely burned in many places by the red-hot scoriae. Many, however, still remained upon the hills, and were not recovered for more than a week, when their feet were found to be dreadfully cut and bruised by the sharp lava, so that the lambs had to be carried home, and for a long time afterwards these were observed to feed in a kneeling position, as their feet were too sore to support the weight of the body. On the east side of Hekla, which was the direction in which the showers of ashes principally fell, the flocks were widely dispersed. Scared by the fearful detonations from the mountain, and burnt by the glowing cinders falling around, the terrified animals fled to a great distance, and some forty or fifty head even made their-way into the district of Skaptartunga, which lies nearly 60 miles to the east of Hekla. When the farmers and herdsmen subsequently traversed the eastern district in search of their lost herds, they observed the remarkable fact, that the boiling springs, so common about the Markar-flíot, had become only lukewarm, or about the temperature of new milk. One particular spring, at the eastern base of the Torfa Jokul, which had hitherto always been used by the Icelanders to prepare their coffee when in its vicinity,

without the need of fire or of boiling apparatus, was now so cooled, as to be utterly unfit for that purpose.

The rate of progress of the lava stream, in its descent from the crater, was not accurately noted; by general report it was said, in the first twelve days of the eruption, to have advanced at the average of about fifty feet per hour. In seven days the new 'Röin' had progressed more than two miles from the foot of Hekla, but its cooling from that time went on rapidly, though when an iron bar was thrust into the rough scoriae that composed its crust, it easily reached the melted mass below, and quickly became red hot. But it was somewhat dangerous to approach very near the melted mass, for if it encountered any obstacle in its course, such as a large stone or rock, it accumulated behind it, and then suddenly burst forth on either side in a stream of liquid fire. The depth of the new lava stream was generally estimated at from 40 to 50 feet, but when compressed within a cleft or defile, it often rose to 120 feet or more.

Up to the 12th of September, the lava stream had only flowed over beds of ancient lavas, and had not as yet reached the mountain pastures. On the 12th, the volcano, after eight days of comparative tranquillity, again became active, and poured forth additional showers of lava and scoria. The injurious effects of the rain of ashes soon became apparent in the vegetable world. Cabbages, &c. which were healthy and flourishing in the gardens on the 13th, were completely withered and dried up by midday on the 14th, and the same fate befell the herbage, wherever the ashes rested thereon. Still worse were the consequences when the ashes fell mixed with rain, as they then adhered more closely to the grass, marking each blade with a dull brown spot wherever the ashes adhered; and then, as these spots increased in number, they gradually blended with each other, and the whole plant became brown and sapless.

On the 14th of September, the detonations from the volcano were fearfully loud, and occurred with great regularity, at intervals of about a minute. They were always preceded by an active outburst of black smoke, probably ashes and steam, from the interior of the volcano. A new crater opened this afternoon on the southern part of the range, and emitted a copious torrent of lava. The ashes and sand rained down in such quantities over all the district to the south-east of Hekla, that in three hours' time the ground was covered to the depth of two inches. During the succeeding days, the lava stream, receiving fresh augmentation from the new crater, advanced on to the mountain pastures, and surrounded the Mel-Field, a small hill of Tufa, isolated among the green pastures at the foot of Hekla. By the 21st of September, the lava stream had progressed nearly 100 fathoms beyond the Mel-Field, through a deep valley on the northern side of that elevation. Throughout the month of October, the volcano continued active, though to a less degree, and though snow covered all the lower ranges, the mountain itself remained bare. On the 10th of November, the subterranean action seemed to have almost entirely ceased, but on the 13th of that month, a violent paroxysm again occurred, and on the 19th, the lava stream reached its furthest limits, having progressed during the preceding six days, at the rate of 1,250 feet per day. During the months of December and January, ashes repeatedly fell, but the loud detonations from the mountain were now replaced by a kind of continuous murmur. On the 26th of March, 1846, the last paroxysm occurred, and Hekla has since then continued perfectly tranquil.

We have thus endeavoured to condense, as much as possible, Mr. Schythe's narrative of the eruption, as we felt it unnecessary to detail, as he has done, the phenomena of each succeeding day. From the observations collected from our author, it is evident that at least three craters or outlets for the pent-up fires within the mountain were opened at a very early period of the eruption. One of these was on the north-east point of the volcano, another on the central or highest part of the summit, and the third on its western declivity. The column of

ashes was repeatedly measured by Gunlöggen, and was ascertained to range from 6,000 to 14,000 feet above the summit.

Our author could not learn that the great warm springs, the Geyser and Strokr, exhibited any remarkable variations during the eruption; but when he subsequently visited these celebrated fountains, he found that the depth of the pipe of the Geyser had diminished from 78 to 60 feet, while the water at the bottom exhibited a temperature of 115 centigrade, the boiling point being, it is needless to say, 100.

The fifth chapter of this book contains much of high interest to the scientific geologist. In it are described, from personal observations made during repeated and prolonged visits, the alterations produced in the mountain by the last eruption. We shall briefly condense these details, and by omitting much that is purely scientific, we hope to render them more acceptable to the general reader.

On the 5th of June, 1846, Mr. Schythe arrived at the farm of Naefrholt, the nearest to the base of Hekla, and distant only 150 yards from the still steaming lava of the recent eruption. It was not, however, till the 26th of this month that Hekla was sufficiently clear of mist to enable him to reach the summit, in company with the owner of Naefrholt, whose property had been greatly devastated by the eruption. On the top he found four recently formed craters in a line parallel to the extension of the range, viz., from south-west to north-east. From these craters there rose up an enormous quantity of dense steam, which, settling down on the sides and summit of the mountain, soon enveloped him in so impenetrable a fog, that at the distance of three paces he could not see his guide, and, at times, he could not even discern the ground on which he stood. We ourselves once encountered a similar fog on the summit of Vesuvius, while all below was calm and serene; but the steam was in this case so heavily charged with ammoniacal vapours, that respiration was nearly impeded, and it was with some difficulty that we escaped into a purer atmosphere.

On the second of September, 1846, there was not a cloud during the whole day on the summit of Hekla, and Mr. Schythe was enabled to devote many hours to the exploration of the mountain. The morning was sharp and frosty, and the recent lava steamed vigorously in the cold air, for a large quantity of rain had fallen during the night, and this, soaking through the porous covering of scoriae and ashes, rose again in steam when it came in contact with the still melted lava beneath. Mr. Schythe first examined the western crater, from whence the great stream of lava that had flowed down towards Naefrholt had evidently come. Here the now congealed torrent was seen piled in huge masses, and in the wildest confusion, as it issued from the mountain's side. The bottom of the crater was filled with new fallen snow to a considerable depth. The next crater was separated from the former by a very narrow ridge of porous slags of the most beautiful carmine red colour. The snow, melting at the bottom of the crater, and sinking through the scoriae to the hot lava beneath, caused a considerable steam to rise, and emitted a constant sound, as it were, of boiling water.

We have but space remaining for a brief extract of our author's theory of the rise and progress of the last eruption. It began, he believes, by the rending of the upper part of the mountain in a direction from south-west to north-east. It was not merely that vent was found for the subterranean forces by the four craters; but an actual disruption of the summit took place in the direction above stated. This rent or cleft did not occur, however, exactly along the line of the summit, but a little to the south of the highest elevated ridge; and, in consequence thereof, the craters and the portions of the rent still remaining open, are higher on their northern than on their southern sides. This circumstance, our author thinks, may have partially influenced

the direction of the ashes and scoriae. In the neighbourhood of the fourth or north-eastern crater, the great disruption was still visible, while parallel to it, at various distances, ran similar smaller rents, evidences of the fearful forces that had shattered the whole summit in this direction. The distance to which the lava stream advanced from Hekla on this occasion, was between seven and eight English miles; but the quantity thrown out, though large indeed, was yet far less than what has been ejected on former occasions. Its aggregate amount is estimated by our author at 14,400 million of cubic feet, a quantity sufficient to bury the whole city of Copenhagen to the depth of 330 feet.

As far as could be explored, the lava stream appeared everywhere to consist of loosely aggregated fragments of scoriae, and in no part did it exhibit that solid and often mamillated form observed in those lavas which have been subjected to pressure, or that have cooled more slowly than this would do under the influence of an Iceland winter. Still, six months after the lava had reached its farthest point, it was found to be in many places only half cooled, and the thermometer, at no great distance below the surface, rose to 84 centigrade. From the rents in the mass, a vast quantity of steam constantly issued, forming a brilliant contrast of white vapour on the hideous black surface of the torrent. The longer that these vapours continued to rise from the crevices, the more did they become charged with acid, and this acid, as might be expected from the extreme whiteness of the steam, was chiefly the hydrochloric. Of carbonic acid, and of sulphuretted hydrogen gas, but few traces could be discovered. Salmiak (muriate of ammonia) was observed in considerable quantities on the surface of the lava, and was thought by the natives to be an efflorescence of pure salt, such as the ancient historians record to have been formerly ejected from the mountain. No doubt the pure salt of the old writers was nothing else but salmiak; though even the Icelanders of the present day regarded this appearance as produced by the influx of the sea water through the subterraneous communications between Hekla and the ocean. So convinced were they of this, that one speculating Icelander, during the summer of 1846, loaded his horses with the muriate of ammonia from the mountain, and actually employed it in curing his fish; but with what success may easily be imagined.

Little or no pumice-stone (pimpsteen) seems to have been ejected by Hekla during the late eruption. Indeed, our author strongly doubts the fact of pumice ever having been thrown out by this volcano. Into his arguments regarding this disputed point, want of space forbids us to enter; but his researches go far to prove that the small quantities of pumice found about this mountain, are probably the produce of some other volcano.

A short but interesting chapter on the injury caused to the inhabitants of the neighbouring districts by the eruption, closes the book. No damage was done directly to any of the dwellings; but it was found necessary to desert the farmhouse of Naefrholt, as the near approach of the lava had dried up the springs which supplied that house with water. It was fortunate that the enormous showers of ashes and scoriae which fell on the earlier days of the eruption, descended chiefly upon the almost uninhabited districts to the east of Hekla. Several of the grazing farms in this direction, however, did not escape, and as the hay had not yet been entirely got in, all that remained in the fields was lost and spoiled. In this way the horses and cattle were deprived of the food absolutely necessary for their maintenance during the winter, and the farmers were forced to diminish their stock by disposing of them for what they would bring. Much more serious, however, was the damage done to the mountain pastures. Of nearly two hundred ewes and lambs possessed by the farms of Naefrholt, in August, 1845, there remained only sixty head in the spring of 1846, the remainder had been killed on account of the deficit of winter provender, and the destruction of the mountain pastures of the summer season. Indeed, the mountain ranges where the sheep had fed during the previous summer,

were in great part ruined beyond all hope; for where they had not been overflowed by the lava, they were covered by a dense layer of ashes and sand to the depth of two feet and more. As a consequence of the scarcity of provender, sickness soon showed itself amongst the cattle. Many of the sheep were seriously lamed by their hoofs being torn and cut to the quick by the sharp and rugged scoriae they had traversed in their homeward flight; their wool, too, was blackened and burnt, and fell off so much, that the fleeces were of little value in the succeeding season. The Iceland Ptarmigan, which forms no unimportant item in the winter's consumption among the farmers, almost entirely deserted the country, and the fishing on that part of the coast where the consequences of the eruption were chiefly felt, was specially unproductive.

Although so many years had elapsed since the previous eruption of Hekla, this last cannot be classed with some of the more serious outbreaks upon record. Its chief interest indeed is, that in Mr. Schythe a historian has been found, thoroughly competent to describe and to judge of the phenomena presented by its progress. Of his own individual exertions, our author says little or nothing; but from a few scattered hints, we learn that he spent many days wandering through the almost unexplored districts to the east of Hekla, where the natives themselves rarely venture, save in search of strayed cattle, or as guides to more adventurous travellers." (Review of: J.C. Schythe, *Hekla og dens sidste Udbrud, den 2den September, 1845*, Copenhagen 1847, in: *The Dublin Review* vol. 25 (1848), p. 1-20)

Prüfungen - Provings



Prüfungen / Provings

2003 - Arzneimittelprüfung der Dr. B. K. Bose-Stiftung

"Im 2003 wurde eine homöopathische Arzneimittelprüfung mit Hekla Lava von der Dr. B.K. Bose Stiftung durchgeführt. Die Prüfsubstanz, Hekla Lava C30, wurde placebokontrolliert doppelblind über einen Zeitraum von mindestens 6 Wochen geprüft. Sowohl die Prüfer als auch die Studienleiter waren verblindet, d.h. beide wussten nicht welche Arznei geprüft wurde und, ob sie Placebo oder die Arznei bekamen. Die Prüfer (auch Probanden genannt) waren gesunde Freiwillige, eine wichtige Voraussetzung für eine homöopathische Arzneimittelprüfung, es handelte sich um Homöopathen und Homöopathie-Studenten. Sie mussten alle strenge Aufnahmekriterien erfüllen. Ein persönliches Aufnahmegespräch mit der Prüfungsleiterin fand vor der Prüfung statt. 17 Probanden erhielten das Mittel Hekla Lava C30, 5 Probanden bekamen Placebo. Die Probanden notierten täglich ihre Symptome in vorgedruckten Tagebüchern. Die Auflistung der Symptome erfolgte jedoch frei, d.h. im eigenen Wortlaut.

Wertgrade der Leitsymptome der vorliegenden HAMP: Je nach Häufigkeit und Intensität der Symptome sind sie in verschiedenen Wertgrade aufgeführt. Die Probanden konnten die Intensität ihrer Symptome mit Grad 1 bis 5 werten, wobei 5 dem intensivsten und 1 dem schwächsten Grad entsprach.

3-wertige Symptome: fett. Ein Symptom wird als 3-wertig aufgeführt, wenn mindestens 50% der Probanden dieses Symptom prüften und/oder die Intensität des Symptoms mit Grad 4 oder 5 angegeben wurde.

2-wertige Symptome: kursiv. Ein Symptom wird als 2-wertig aufgeführt, wenn die Häufigkeit des Symptoms zwischen 30-49% beträgt und/oder die Intensität Grad 3 entsprach.

1-wertige Symptome: normal. Die restlichen Symptome werden als 1-wertig eingeteilt und werden in normaler Schrift aufgeführt. Es werden nur Symptome berücksichtigt, welche bei mehr als einem Probanden aufgetreten sind.

Geist & Gemüt

Beschwerden durch Entrüstung.

Gefühl der Hilflosigkeit.

Antriebslosigkeit. Trägheit.

Keine Motivation.

Lustlosigkeit.

Gleichgültigkeit gegenüber allem.

Schweres Gemüt, depressiv.

Grosse Hoffnungslosigkeit.

Bedürfnis alleine zu sein.

Traurig, niedergeschlagen, melancholisch.

Gefühl von innerer Leere.

Gefühl von Überforderung durch den Alltag. Es ist mir alles zu viel.

Gesteigertes Mitgefühl für Schicksale / Situationen anderer.

Sehr empfindlich auf ungerechtes Verhalten ihm oder anderen gegenüber.

Erträgt keine Ungerechtigkeit.

Starke Konzentrationsschwierigkeiten.

Gedächtnisprobleme, v.a. Kurzzeitgedächtnis. Vergesslich.

Schwierigkeiten mit Denken, kann nicht klar denken.

Benebelt / blöde im Kopf. Stumpfsinn.

Mühe, die richtigen Worte zu finden.

Schnell gereizt und ärgerlich.

Ein Gefühl wie weit weg von sich selbst. Es ist, als ob nur seine Hülle anwesend wäre.

Wie nicht ganz da im Leben, sondern wie noch am Erwachen/Schlafen.

Erschöpfung und Müdigkeit.

Forscher, bestimmter Umgang. Schroff.

Gemütssymptome werden >> **durch in die Sonne sitzen.**

Kopfschmerzen

Chronische Kopfschmerzen. < Bewegung jeglicher Art.

Kopfschmerzen, drückend.

Druck in der Stirn.

Kopfschmerzen mit starken Verspannungen im Nacken- und Schulterbereich.

Kopfschmerzen vom Nacken aufsteigend bis in die Stirn/Schläfen.

Dumpfe Kopfschmerzen an und in den Schläfen.

Sonstige Kopfsymptome

Hitze im Kopf.

Dumpfes, komisches Gefühl im Kopf, wie benebelt, wie wenn man nicht ganz da wäre.

Augen

Brennende Augen. > frische Luft, Kühle, Druck mit den Händen auf den Augen.

Gerötete Augen.

Fremdkörpergefühl in den Augen.

Ohren

Sehr viel Ohrenschmalz.

Geräusche in den Ohren (Rauschen / Sausen / Pfeifen).

Nase

Nasenbluten.

Polypen.

Nase läuft, zusammen mit Kratzen / Wundgefühl im Hals.

Sehr geruchsempfindlich.

Gesicht

Schmerz durch kariöse Zähne oder nach Extraktion.

Schmerz in den Nebenhöhlen, Kieferhöhlen.

Blitzartige, stechende Schmerzen in der rechten Gesichtshälfte. (Backenknochen / Oberkiefer, Unterkiefer und oberhalb der rechten Schläfe.)

Harte, dauerhafte, berührungsempfindliche Pickel (v.a. am Kinn, um den Mund, zwischen den Augenbrauen).

Mund und Zähne

Trockenheit im Mund.

Mundgeschmack metallisch, wie von einer Kupfermünze im Mund.

Zahnfleischentzündung.

Zahnschmerzen.

Drückende Zahnschmerzen in den plombierten Zähnen, Zahnfleisch empfindlich beim Zähneputzen. < warme und kalte Getränke, << Kohlensäure.

Empfindlichkeit der Zähne gegen Druck.

Empfindlichkeit der Zähne auf Wärme/Kälte und Essen und Trinken, v.a. Früchte.

Innerer Hals

Wundgefühl und Kratzen im Hals. Rauer Hals. < morgens beim Erwachen.

Erwachen mit Halsschmerzen.

Magen

Viel Durst auf kaltes Wasser.

Grosser Hunger. „Stopft immer wieder Essen in sich hinein“.

Verlangen nach Süßem.

Verlangen nach Kartoffeln (v.a. Salzkartoffeln).

Übelkeit v.a. morgens beim Aufwachen.

Übelkeit zusammen mit Kopfschmerzen.

Übelkeit mit Schwindel.

Abdomen

Stechen im Bauch links, wie Seitenstechen. Gefühl, als ob die unterste Rippe durch die Bauchhaut sticht.

Bauch sehr aufgebläht.

Warmes Gefühl („lokalisiertes Feuer“) im Bauch.

Rektum / Stuhlgang

Stuhlgang am Morgen beim Erwachen.

Durchfall mehrmals täglich.

Durchfall früh am Morgen.

Harnwege

Druck auf Blase, jedoch nur wenig Urin.

Brust

Stechen in den Brüsten.

Druck auf Brust, zwischen Rippen beim Übergang zum Sternum.

Schmerz in der Brust.

Nacken / äusserer Hals

Verspannungen im Nacken- und Schulterbereich und der Halswirbelsäule.

Verhärtung der Halsdrüsen.

Perlschnurartige Verhärtung der Halsdrüsen.

Rücken

Schmerzen im Rücken wie zerschlagen, morgens beim Erwachen. Schmerzen lassen im Laufe des Tages nach und sind > Bewegung (Spazieren oder Sitzen mit ständigem Lagewechsel).

Zerschlagenheitsgefühl im Bereich der Brustwirbelsäule, v.a. zwischen den Schulterblättern.

Stechen im Rücken, Mitte Brustwirbelsäule, zwischen Schulterblatt und Wirbelsäule. < tief atmen. < Aufstehen, dann aber > langsam bewegen, > Wärme.

Schmerzen mit Steifheit im Rücken am Morgen beim Aufstehen und bei den ersten Bewegungen.

Steifheit in der Brustwirbelsäule bis zum Nacken. < tief atmen.

Ziehender, kneifender, punktförmiger Schmerz unter dem Schulterblatt. > starker Druck, Wärme.

Schmerzen im Rücken am Morgen beim Aufwachen, beidseitig auf Höhe der Schulterblätter oder zwischen Schulterblatt und Wirbelsäule mit Steifheit beim Aufstehen und den ersten Bewegungen. < tief atmen.

Kreuzschmerzen morgens nach dem Aufstehen. Verschwinden im Laufe des Tages.

Grosses Schwächegefühl, Müdigkeit im Rücken, v.a. Kreuzbereich. < morgens beim Aufwachen, bücken, sich aufrichten, aufstehen vom Sitzen, Bewegungen wie Haushalt, Gartenarbeit. > langsam aufrichten, > Laufen / Gehen.

Ziehender Schmerz im hinteren Beckengürtel (Nierengegend), der unteren Lendenwirbelsäule und Kreuzbeingegend.

Extremitäten

Eiskalte Hände, weiss-bläulich vor Kälte. Trotz Bewegung usw. und warmen Temperaturen bleiben sie kalt.

Kribbeln/Prickeln in den Extremitäten.

Stechende Schmerzen in den Gelenken. Durch Kälte ausgelöst oder verschlimmert. << während Wetterwechsel (wenn sich das Wetter innerhalb kurzer Zeit verändert/ Föhn). >> durch Wärme.

Ziehende Schmerzen in den Muskeln, wie Muskelkater.

Schwere in der Motorik.

Schmerzen in den Gelenken und kleinen Knochen der Extremitäten, v.a. der Hände. Die Schmerzen sind stechend-ziehend. Das linke Handgelenk und die linke Hand sind schlimmer betroffen. Die Schmerzen strahlen außerdem vom linken Handgelenk in den linken Ellenbogen aus. Die Schmerzen im Handgelenk sind schlimmer auf der Seite, die dem kleinen Finger näher ist.

Stechende Schmerzen in den Hüftgelenken / der Leistengegend.

Muskelschmerzen (blitzartig, stechend) in Oberschenkeln.

Schmerzen und Steifheit im Knie und anderen Gelenken, wenn man nach dem Sitzen aufsteht. Fühlt sich wie alte Leute voller Rheuma, elendig. > Wärme, > tagsüber.

Blitzartige, ziehende-zerreissende Schmerzen im rechten Knie etwas unterhalb der Kniescheibe (bewegungsunabhängig).

Schmerzen im rechten Fußgelenk ausstrahlend an der Fußseite rechts.

Stechende, ziehende, tiefe Knochenschmerzen.

Krämpfe, v.a. in den Oberschenkeln (Rückseite), Tibia, Waden und Füßen.

Eingeschlafene Arme und Hände (im Schlaf) am Morgen beim Erwachen. Vergeht sofort beim Aufstehen.

Haut

Juckreiz an diversen Körperstellen.

Juckreiz in der Kreuzbeingegend.

Dauerhafter, prominenter Pickel auf dem Kinn.

Die **Nagelbetten der Finger** (besonders linker Mittelfinger) sind **wund** und aufgesprungen und bluten leicht.)

Trockene Haut, gerötet mit kleinen Rissen.

Schweiss

Scharfer, stechend riechender Achselschweiß.

Körpertemperatur

Eiskalte Hände.

Eiskalte Füße.

Hitzegefühl im Körper, wie Fieber. Temperatur aber normal.

Frieren, wie am Anfang einer Erkältung.

Schlaf

Schläfrigkeit.

Schlaflosigkeit bis ca. 3 Uhr morgens.

Erwachen um 4 Uhr / 5 Uhr und kann nicht wieder einschlafen.

Schlaf ist sehr tief, komatös. Erwacht am Morgen wie aus einer Narkose.

Träume

Sexuelle, erotische Träume.

Die eigene Zähne fallen aus / zersplittern oder werden abgebissen.

Hochzeit, Hochzeitskleid.

Gewalt.

Diebstahl, ausgeraubt zu werden.

Allgemeines

Entzündung der Nebenhöhlen.

Krampfadern.

Neuralgische Schmerzen.

Schwellung der Drüsen.

Linksseitig.

Psychische Symptome hängen mit Wetterumschwung zusammen. Eine Besserung der Symptome beim Wetterumschwung von Schnee zu Sonne, eine Verschlechterung bei umgekehrter Wetterlage.

Starke Müdigkeit.

Körperliche und geistige Schwäche.

Abneigung gegen Telefonieren.

Periodizität der Symptome. Die Symptome traten immer wieder für einige Tagen nacheinander auf, dazwischen waren dann aber Tage, an denen sich keine Symptome zeigten.

Der Körper ist schwer wie Blei.

Ein tief-, langsam- und langwirkendes Mittel.

Modalitäten

Besserung:

nachmittags (13 - 18 Uhr).

kalte Hand auf die Stirn und Schläfen pressen

Kühle, frische Luft, draußen

draußen spazieren / gehen

Druck

Sonne

Wärme

kaltes Wasser trinken

Ablenkung

fortgesetzte Bewegung

Augen schliessen

Liegen

Ruhe

Verschlimmerung:

abends (18 - 22 Uhr).

morgens beim Erwachen

beim Aufstehen und den ersten Bewegungen am Morgen

Bewegung

zu Beginn der Bewegung

Druck

Ruhe

2 Uhr bis 5 Uhr

nach vorne beugen

Kälte, kalter Wind

tief atmen

einatmen

Sitzen

aufstehen vom Sitzen, sich aufrichten

(Dr. B.K. Bose-Stiftung 2003, Hekla Lava - Homöopathische Arzneimittelprüfung (HAMP). Prüfungsdirektor:
Dr. Mohinder Singh Jus. Prüfungskoordinatorin: Dr. Martine Cachin Jus. Prüfungsleiterin: Nicolienne Potgieter.
Organisation: Dr. B.K. Bose Stiftung)

Heilungen / Cures



Heilungen / Cures

Übersicht

1896 - Exostosis of the right os calcis in a girl aged 15 - James C. Burnett

1946 - Hard tumour of the kidney in a woman in the fifties - Dorothy Shepherd

1896 - Exostosis of the right os calcis in a girl aged 15 - James C. Burnett

“Dr. Garth Wilkinson went once to Iceland for a holiday, and observed that the animals which fed in the pastures where the finer ashes of Mount Hecla fall, suffered from immense maxillary and other exostoses. Being an adherent of the scientific system of medicine founded for us by Samuel Hahnemann, he brought some *Heclae lava* home with him, and it has been already successfully used to cure affections similar to those which it is capable of causing.

On July 3, 1880, a young lady, aet. 15, came under my observation with an exostosis on her right os calcis, somewhat smaller and a little flatter than half a walnut-shell. It was at times painful. The patient was in other respects in good health and well nourished, but her teeth were not very sound. She goes blue in winter, and suffers also very badly from chilblains both on hands and feet, worse on hands.

R. Trit. Heclae Montis lavae, 3iv.

S. Six grains three times a day.

17th. - The exostosis is decidedly smaller; it never pains now.

Pergat.

September 25. - The exostosis has entirely disappeared; the two heels being compared, no difference between them can now be discovered.

Hecla lava has been shown to consist of silica, alumina, calcium, and magnesia, some ferric oxide. We are, therefore, not astonished that it can cause and cure exostosis.

Brother allopath, this is science in therapeutics; what have *you* to take its place? Give absorbents and paint the part with iodine? What guarantee can you give me that your absorbents will not absorb a bit of the pancreas or some small glands in lieu of the exostosis?

Or you are, also, true to *your* principle: *Contraria contrariis curantur*? Then pray tell me *what* is the *contrary* of an exostosis?”

(James C. Burnett, Fifty reasons for being a homoeopath, London 1896, Case of exostosis of right os calcis cured by Hecla lava, p. 127-129)

1946 - Hard tumour of the kidney in a woman in the fifties - Dorothy Shepherd

“There is an old tale which is known to Homoeopaths, and it will bear re-telling, a veritable ‘sermon in stones’ - which proves the truth of our law that like cure like. Here it is. A certain Dr. Garth Wilkinson went to Iceland, and he noticed that animals grazing on pastures which were covered with the fine ashes from the lava of Mount Hecla, suffered from enormous bony tumours of the jaw. He brought some of the ashes back to England, triturated it, made it into pills and used it to cure exostosis and other bony tumours, both in horses and human beings. Dr. Burnett and several other homoeopathic physicians followed his example, and since that time Hecla lava, as it is still called, is a commonly used remedy for certain types of spongy, bony tumours, which disappear rapidly under its use. It is more frequently employed in the lower potencies, such as the third decimal, that is 1/1,000 grain doses, or second centesimal triturations, i. e., in 1/10,000 grain doses.

I had an interesting case several years back; a woman in the fifties presented herself with a very hard tumour of the kidney. She was sent to a surgeon who removed it and sent her out cured. Twelve months later she came back with a recurrence of the disease, again sent to the surgeon who refused to operate and put her straight on enormous doses of morphia, because of the great pain she suffered from, which became so acute that quite appreciable doses of morphia did not relieve it. She came back and asked: could not something more be done for her? So one was led, rather late in the day, to try what homoeopathy could do. She was put on *Hecla lava* 3x, three times a day, and was taken off the morphia, and the *Hecla lava* absolutely removed the pain. The woman had the typical malignant look, a waste, pallid, exhausted wreck. She picked up in the most astonishing manner, her pallor disappeared, her weakness went, and she started to take up her household duties again, went so far as to do the household washing, and even washed the blankets herself; the tumour became smaller and smaller. The surgeon originally had only give her three months to live. Fifteen months later I sent her back to him, still alive, and with only a trace of the tumour left. Unfortunately she drifted always then; she ceased attending, and one does not know what became of her. Anyway for fifteen months she never had any pain, her tumour had practically disappeared, and she considered herself well enough to go back to her duties. It is not a perfect case, as one does not know the end. But one does know the *Hecla lava* relieved, where morphia did not touch it.”

(Dorothy Shepherd, M.D., *More Magic of the Minimum Dose* (1946), p. 96-97)

Klinische Hinweise / Clinical Hints



Klinische Hinweise / Clinical Hints

Übersicht

- 1846 - A great misfortune has befallen Iceland
- 1871 - A letter from Dr. Wilkinson and first hints to the clinical use of a new remedy - Wm. Holcombe
- 1875 - Hecla Lava in Troubles with the Teeth - L. Whiting
- 1876 - Two cases illustrative of the action of Hecla Lava - T. S. Scales
- 1881 - Hecla Lava in caries of the bones - McClelland
- 1886 - Three cases cured with Hecla Lava - A. P. Bowie

1846 - A great misfortune has befallen Iceland

"Letters from Iceland, received at Copenhagen, state that a great misfortune has befallen that country in consequence of the present eruptions of Hecla; a fatal malady having attacked the cattle, from eating herbage which had been covered by the volcanic ashes. "These ashes act more particularly on the bones of the animals which have swallowed them. Thus, on the bones of the feet there are formed, in less than twenty-four hours, osseous excrescences of an oblong form, which gradually assume so formidable a development that they prevent the beasts from walking; the same phaenomenon is then manifested in the lower jaw, which is at the same time enlarged, and extends in all directions so considerably that it eventually splits in several places; whilst on the teeth of the upper jaw there is formed a species of osseous needles, very long and pointed, which take root in the lower jaw, and even traverse it, - a phase of the malady which always determines a fatal issue. As high winds had prevailed for some time, the volcanic ashes were scattered throughout the island; and a great number of cattle, especially oxen, cows, and sheep, had perished. If the eruption of Mount Hecla is prolonged for two months more, all the rural proprietors who have not enough hay to keep their herds - and the majority are in this situation - will be obliged either to slaughter their cattle, or to abandon them to certain death on the pastures thus poisoned by the volcanic ashes. The eruption of Mount Hecla was extremely violent. The flames which issued from the three great craters attained a height of 14,000 feet; and their breadth exceeded the greatest breadth of the river Picensen, the most considerable river in Iceland. The lava had already formed lofty mountains; and amongst the masses of pumice-stone vomited by the volcano, and which have been found at a distance of three-fourth of a mile, there were some which weighed half a ton. By the eruption of Hecla, the enormous quantities of snow and ice which had accumulated for several years on the sides of that mountain have melted, and partly fallen into the river Rangen, which has overflowed its banks several times. The waters of that river, which runs almost at the foot of Mount Hecla, and which receives a large portion of the burning lava, were so hot that every day they cast upon the banks numbers of dead trout, almost half-baked. Every night vivid streaks of the aurora borealis illumined the sky."

(The Spectator, A weekly Journal of News, Politics, Literature and Science, vol. 19 (1846), p. 418)

1871 - A letter from Dr. Wilkinson and first hints to the clinical use of a new remedy - Wm. Holcombe

"In the first place, I wish to call the attention of the profession to a new remedy: Hekla Lava. Prepared from the lava which issued from the famous volcano of Iceland.

My own attention was first called to this substance by Dr. John James Garth Wilkinson, of London, a name honorably mentioned wherever Homoeopathy is known, and still more widely celebrated in the philosophic and literary world.

The following letter contains all that is at present known of the Hekla lava:

76 Wimpole Street, Cavendish Square, London,

Dec. 6th, 1869.

"My Dear Friend,

I promised you some Hekla lava. Here it is: in the pure powder, and also in 30th globules, from which a 31st can be made if thought worth while.

Its known pathological effects on the sheep in the vicinity of Hekla, are immense exostoses of the jaws. It also produces drying up of the milk in both sheep and cows.

The finer ash, which fell on the pastures in distant localities, was particularly deleterious, while the gross ash near the mountain was inert.

In cows, post-mortem examination showed intestines filled with ashes, hardened to a mass, and stomach coated over with a pitch-black membrane, spotted with brown, and difficult to remove by washing.

The jaw teeth were covered with a shining metallic crust.

Several young horses died from lumps on the jaw-bones, so large as to cause dislocation.

The sheep, when butchered, were found of a bluish hue internally, and the intestines were friable. In many cases, worms, from two to three inches long, with pale gray bodies and brown heads, and a little thicker than a horse-hair, were found in the bronchiae.

In sheep, the osseous and dental systems were much affected. The head bones, and especially the jawbones, swelled, and became so friable that when boiled they fell to pieces. The thigh, and particularly the shin bones, swelled and bulged. The jaws were sometimes covered with large swellings, which spread and were of loose texture, and darker in color than the bone.

These could be separated from the bone without injuring it; but in some fatal cases a hole in the bone going down to the marrow was discovered under the swelling.

These particulars are from a Danish account of the eruptions of Hekla, and their consequences to general nature, and to man, beast and vegetable.

Hekla lava, according to Professor Morris, of University College, London, has for general constituents, combination of Silica, Alumina, Lime and Magnesia, with some Oxide of Iron. Sometimes it contains Anorthite and other minerals.

In this imperfect pathogenesis we have undoubtedly symptoms pointing to diseases of teeth and bone. I have used the Lava in toothache and in swellings about the jaws, with magical effect in several cases; also in gum abscess from decayed teeth, and with apparently good results in difficult teething.

With affectionate regard,

Yours,

J. J. Garth Wilkinson."

In accordance with the suggestions given by this letter, I have made considerable use of the Lava. During the last winter we had in New Orleans an epidemic of Myalgia. The pains in the muscles were very severe and attacked all parts of the body, although I think the intercostal muscles suffered most. Rheumatism and neuralgia in all their protean shapes were very prevalent. During this singular epidemic it was observed that many persons who had teeth extracted were tormented with neuralgic pains in the cavity and jaws for days afterward. The people complained that the dentists had fractured their jaws; the dentists affirmed that in all such cases the roots of the teeth were diseased. Some persons were more than a week tortured with pains worse than the toothache.

I saw six of these curious cases. In five of them the Hekla lava gave prompt relief - all of them were well in forty-eight hours. Two of them were relieved by a single spoonful of a solution of the 31st. The sixth case, a child, suffering after extraction of a deciduous tooth, apparently experienced no benefit.

A little girl of ten years, scrofulous, fell upon a protruding stick as thick as a man's little finger. It penetrated, pushing the skin before it without breaking it, up between the tongue and the left inferior maxillary bone. It was followed by an immense abscess and severe febrile

disturbance. After the pus was removed and the general swelling subsided, I discovered a great enlargement of the maxillary bone. It was not merely engorgement of the gums, but a genuine thickening and bulging of the bone itself. I gave her Hekla lava, 3rd trituration, for several days, without any obvious diminution of the tumor. I then gave the 31st attenuation in the pellet form, and the sudden disappearance of what I had apprehended would prove a serious exostosis, was truly magical.

I have reason to believe, also, from my experiments, that Hekla lava has acted curatively in cases of toothache, of facial neuralgia connected with decayed teeth, and of some complicated headaches of long standing.

It is probable that Hekla-lava will be found serviceable in the following affections :

Otitis,

Peridontitis,

Exostosis,

Osteosarcoma,

Rachitis,

Hip-disease and white swelling,

Syphilitic nodes,

Difficult dentition,

Abscess of the gums,

Injuries to alveolar processes,

Diseases of the antrum highmoriazum,

Toothache,

Facial neuralgias and headaches, dependent on derangement of the dental nerves."

(Wm. H. Holcombe, M.D., New Orleans, Clinical Contributions, in: Transactions of the twenty-third Session of the American Institute of Homoeopathy, Held in Chicago, June 7, 8, 9, and 110, 1870 (1871), p. 441-443)

1875 - Hecla Lava in Troubles with the Teeth - L. Whiting

"The pathogenetic action of this truly valuable remedy seems to closely resemble that of Silicea. According to Prof. Morris of London, Hecla Lava contains silex, calcium, alumina, magnesia, iron, and traces of some other minerals usually found in the products of volcanic eruption. All our pathogenetic knowledge of the lava is derived from Danish accounts of its effects on the cattle that graze in the vicinity of the volcano, the herbage being covered with the fine ashes from the crater. These animals are all affected after a short time with exostoses and necroses, first manifesting its action in the maxillary bones, then as the disease progresses in other parts of the osseous system. These simple but certain indications of its power and sphere of action led Dr. Wilkinson, of London, to make use of the attenuated Hecla Lava in similar diseased conditions, with the most gratifying results. It has also proved curative in odontalgia, particularly if the teeth are very sensitive to pressure, this condition being an indication of congestion or inflammation of the fang-capsule, which, if unchecked, goes on to alveolar abscess.

In many cases of facial neuralgia, where the irritating cause is a carious tooth, Hecla Lava commands order, and the refractory nerves are not dilatory in obeying its dictates. I herewith present a few cases confirmatory of its range of action in addition to those reported at our last meeting.

Case 1, Sept. 12, 1874, Miss -, aet. twenty-seven, had an inferior molar of right maxilla extracted some two years ago, since which the tissues have not healed. The patient has had a continuous slight discharge of bad tasting pus, at times containing small particles of a soft, gritty substance; *Hecla Lava*, 4th cent. trit., cured in one week.

Case 2, Mr. -, aet. thirty-five, had a carious wisdom tooth extracted three days before the case came under my observation, during which time the pain in the wound, and at times in various localities in the head and face, had been so severe that he was not able to eat or sleep. *Hecla Lava*, 4th cent. trit., improved the case with the first dose, and in a few hours he was entirely free from the pain, and enabled to rest from the excessive fatigue of the three days of agony.

Case 3, June 3, 1875, Mr. F. presented a case of conjunctivitis of right eye, for which various remedies were prescribed during a period of eighteen days, with relief.

On June 21 our patient again called at office - his eye not improving, but rather getting worse - to obtain advice in regard to having right cuspid of upper jaw extracted. He then informed me that he had had trouble with the tooth for several weeks past, but had deferred having it extracted, hoping that the member would cease to offend. On examination I found the tooth very sensitive to slight pressure on the crown. A perceptible swelling, and indurated tumor of the size of a large pea just under the right alar nasi, also very sensitive to touch.

For this combination of symptoms I prescribed the lava, which in a week had cured the tooth and the conjunctivitis."

(*Hecla Lava*, by L. Whiting, M.D., Danvers, Reported to the Massachusetts Homoeopathic Medical Society, in: *The New England Medical Gazette* vol. 10 (1875), p. 460-461)

1876 - Two cases illustrative of the action of Hecla Lava - T. S. Scales

"Dr. T. S. Scales gave the two following cases illustrative of the action of *Hecla Lava*:

In the month of February, 1876, A. B. S., aged fourteen and a half years, school-girl, commenced suffering agonizing pain in her left forefinger. After enduring the pain for about twenty-four hours, she showed the finger to one of our sister members, who at once diagnosed a felon. The next day she showed it to one of our honored brethren, who pronounced it a felon, and painted it with *Nitrate of Silver*, and advised her, if it did not get better, to go home to her father. Accordingly, in one week from the commencement of the pain, she came home, suffering most intensely. I gave her *Hecla Lava*, the third trituration (after having painted it with *Chromic Acid*, from which she experienced but slight benefit), and she suffered, after the first few doses of *Lava*, but little more pain. The swelling subsided, and the finger, which had been very sensitive to the slightest jar, soon resumed piano practice. It is now less than two months since the felon commenced, and the finger is as good as ever. It never discharged nor shed the nail.

J. N. D., aged about sixty-four, had a tooth which had commenced to ulcerate. He had a swelling of the jaw and gum, opposite the end of the fang, which was quite large and very painful. He had had no respite for some days, except by filling his mouth with cigar-smoke and soon expelling it, and refilling the mouth with fresh smoke.

Although he was sure that nothing could do any good till it should open, I persuaded him to take *Hecla Lava*, in small powders of the third trituration, to be repeated once in two hours. After two or three doses he began to feel relieved from the pain, and in five or six hours was entirely relieved, and slept. In a few hours he awoke again with the agonizing, throbbing pain, but one or two doses of the same trituration permanently relieved the pain; the swelling and soreness rapidly subsided; the next day he resumed his business, and the tooth soon became well and serviceable.

In several case of severe prosopalgia, accompanying decayed teeth, *Hecla Lava*, 30th, has done surprisingly well in my practice. I think it is one our most valuable remedies."

(Report of the annual meeting of the Massachusetts Homoeopathic Medical Society, April 12, 1876, *The New England Medical Gazette* vol. 11 (1876), p. 282-283)

1881 - Hecla Lava in caries of the bones - McClelland

"I would mention hecla lava as a remedy for caries of the bones of the feet. I have also obtained very favorable results from the use of this drug in caries of other bones. Before leaving home in June I saw one of our prominent citizens who had exostoses of the tibia. The nodosities were very large. He had been under homoeopathic treatment for several years, and also under that of the old school. The disease had gradually incapacitated him attending to his official duties, in consequence of the continuous pain. I gave several remedies, such as asafoetida, silicea, etc., but without any favorable result. I then operated upon the diseased structure, removing, by means of the chisel, the exostoses together with a portion of the periosteum which had become carious and soft. Afterwards my brother continued the treatment of the case, but the pain in the bone continued, and there was no relief at the end of two weeks. An old school surgeon saw the case in consultation, and said there was necrosis of the whole bone, and advised that the diseased portion should be removed. The patient would not consent to an operation, but continued the internal treatment. He was then put on hecla lava, and in the course of three days the pain subsided; by the end of a week the pain was gone, and by the end of the second week the wound has healed, and the judge was able to resume his duties."

(Transactions of the Homoeopathic Medical Society of the State of Pennsylvania, Seventeenth annual session 1881, Caries of tarsal bones, Discussion, Dr. McClelland, p. 114-115)

1886 - Three cases cured with Hecla Lava - A. P. Bowie

"This remedy was first brought to my notice by an article in the Transactions of the American Institute of Homoeopathy for 1870, and was there recommended for complaints of the maxillae, and as there are no provings of the drug, I report the following cases showing its clinical value:

Mrs. A. After the extraction of a molar tooth she has had violent pain in the upper jaw which no domestic remedies will relieve. Jaw is sore and swelled and painful to touch. Hecla lava 30, in water, a dose every half-hour, relieved the pain entirely in a short time.

John -, a colored lad, aged 15, had a sore tooth which was extracted and ever since then there has been an enlargement of the lower jaw, near the cavity of the tooth, which has grown now to the size of a hickory nut and can be seen very plainly as the cheek bulges out, and it is hard to the touch. It has now lasted for several months and seems to be growing larger. Hecla lava 30, one powder night and morning, removed the growth in one month's time.

But the most remarkable effects of the remedy were obtained in the case of my brother, who for several years had been affected with a growth of a polypoid character and which commenced in the antrum Highmorianum and from thence encroached upon the adjacent structures so as to deform the face, forcing the eyeball upwards and everting the lid and obstructing the nostrils; and downwards into the mouth, so that breathing and mastication were both seriously impeded. The concomitant symptoms were epistaxis, headache and difficult swallowing. After various remedies were used in the case with no effect, I prescribed Hecla lava 30, in infrequent doses, and with the result of curing the tumor entirely. Of course some deformity remains, but the growth has entirely disappeared and now, after the lapse of several years, there has been no return."

(A. P. Bowie, M.D., Uniontown, Three cases cured with Hecla lava 30, Transactions of the Homoeopathic Medical Society of the State of Pennsylvania, Twenty-second annual session 1886, p. 153-154)

Hering's Guiding Symptoms



Constantin Hering (1800-1880)

Hering's Guiding Symptoms

1887 - Constantin Hering

(Constantin Hering, *The Guiding Symptoms of our Materia Medica*, vol. 5 (1887),
Hekla Lava, p. 525-527)

The lava and scoriae thrown out from Mount Hekla, in Iceland.

It is described in a letter of J. Garth Wilkinson, of London, to Wm. H. Holcombe, of New Orleans. He writes: "Its known pathological effects on the sheep in the vicinity of Hekla are immense exostosis of the jaws. It also produces drying up of the milk in both sheep and cows. The finer ash, which fell on the pastures in distant localities was particularly deleterious, while the gross ash near the mountain was inert. In cows, post-mortem examination showed intestines filled with ashes hardened to a mass, and stomach coated over with a pitch-black membrane, spotted with brown, and difficult to remove by washing; the jaw teeth were covered with a shining metallic crust. Several young horses died from lumps on the jaw-bones, so large as to cause dislocation. The sheep, when butchered, were found to be of a bluish hue internally, and the intestines were friable. In many cases worms from two to three inches long, with pale gray bodies and brown heads, and a little thicker than a horsehair, were found in the bronchiae. In sheep the osseous and dental systems were much affected. The head-bones, and especially the jaw-bones swelled and became so friable, that when boiled they fell to pieces. The thigh, and especially the shin-bones swelled and bulged. The jaws were sometimes covered with large swellings, which spread and were loose of texture, and darker in color than the bone; these could be separated from the bone without injuring it; but in some fatal cases a hole in the bone going down to the marrow, was discovered under the swelling.

These particulars are from a Danish account of the eruptions of Hekla, and their consequences to nature, to man, beast and vegetable.

Hekla lava, according to Prof. Morris, of University College, London, has for general constituents, combination of Silica, Alumina, Lime, Magnesia, with some Oxide of Iron. Sometimes it contains anorthite and other minerals. In this imperfect pathogenesis we have undoubtedly symptoms pointing to diseases of teeth and bone. I have used the lava in toothache and in swellings about the jaws, with magical effect in several cases; also, in gum-abscess from decayed teeth, and with apparently good results in difficult teething". - Raue's Rec. 1872, p. 6.

CLINICAL AUTHORITIES. - *Tumor in antrum of Highmore*, Bowie, Trans. Hom. Med. Soc. Pa., 1886, p. 153; *Neuralgia*, Whiting, Times Retros., 1876, p. 12; N. E. M. G., vol. 10, p. 461; *Affection of tooth with conjunctivitis*, Whitney, N. E. M. G., vol. 10, p. 461; *Carious teeth* (4 cases), Whiting, N. E. M. G., vol. 10, p. 460; *Affections of jaw-bones* (2 cases), Bowie, Trans. Hom. Med. Soc. Pa., 1886, p. 153; *Affection of right maxilla*, Whiting, N. E. M. G., vol. 10, p. 461; *Whitlow and gumboil*, Ascales, B. J. H., vol. 34, p. 692; *Caries of bone*, McClelland, Trans. Hom. Med. Soc. Pa., 1881, p. 114.

Sensorium

ii Vertigo, everything goes up, down and side-wise.

Inner Head

ii Chronic headache.

Smell and Nose

I Destructive (syphilitic) ulceration of nasal bones.

Upper Face

I Facial neuralgia or headache dependent on derangement of dental nerves, or where the irritating cause is a carious tooth.

I Polypoid growth commencing in antrum Highmorii and from thence encroaching upon adjacent structure so as to deform face, forcing eyeball upwards and everting lid, and

obstructing nostrils; downward into mouth, so that breathing and mastication were seriously impeded; epistaxis; headache.

Teeth and Gums

ii Toothache, particularly if teeth are very sensitive to pressure.

| Toothache with swelling about jaws.

| After extraction of carious wisdom tooth pain in wound, and at times in various localities in head and face, so severe that he cannot eat or sleep.

| Neuralgia, when irritating cause is a carious tooth.

| Neuralgic pains in cavities from which teeth had been extracted.

| After extraction of molar tooth violent pain in upper jaw which is sore, swollen and painful to touch.

| Since extraction of inferior molar of right maxilla two years ago, tissues have not healed; continuous slight discharge of bad tasting pus, at times containing small particles of a soft, gritty substance.

| Right cuspid of upper jaw very sensitive to slight pressure on crown; swelling, and indurated tumor as large as a pea under right alae nasi very sensitive to touch; conjunctivitis of right eye.

| After extraction of sore tooth gradual enlargement of lower jaw near cavity of tooth finally becoming as large as a hickory nut, causing cheek to bulge.

| Gum abscesses from decayed teeth.

| Toothache caused by abscesses of gums, injuries to alveolar process, or diseases of antrum Highmorii.

| Enlargement of maxillary bone from injury.

| Injury to inferior maxillary of a scrofulous girl, which produced an immense abscess, and afterwards great enlargement of maxillary bone.

| Difficult dentition in scrofulous or rachitic children.

Outer Chest

| Myalgia, especially of intercostal muscles.

Neck and Back

| Induration and infiltration of cervical glands, studding neck like a row of pearls.

Lower Limbs

ii Hip disease.

| Exostoses of tibia; nodosities very large; severe, continuous pain, incapacitating him from work; the exostoses and portion of periosteum, which had become carious and soft, were removed by operation; necrosis of whole bone had been diagnosed; three days after administration of Hekla lava the pain, which still continued after operation, subsided, and by end of second week wound had healed.

| Caries of bones of feet.

Locality and Direction

Right : cuspid of upper jaw very sensitive to slight pressure; swelling under alae nasi; conjunctivitis.

Sensations

Pain in wound when tooth has been extracted.

Violent pain : in upper jaw.

Severe continuous pain : in lower limbs.

Neuralgia : of face; in cavities where teeth have been extracted.

Headache : dependent on derangement of dental nerves.

Tissues

It affects mostly the bones of the head, jaws, teeth and legs.

In five or six cases of osteo-sarcoma, exostosis, and osteitis it arrested the development and prevented recurrence.

Scrofulous ostitis or periostitis, resting on a syphilitic basis, and especially affecting bones of face and antrum Highmorii.

Osteitis; periostitis; exostosis; osteo-sarcoma; rachitis.

White swelling.

Whitlow and gumboil.

Syphilis.

Touch, Passive Motion, Injuries

Painful to touch : upper jaw; swelling under right alae nasi sensitive.

Slight pressure : right cuspid of upper jaw sensitive.

From injury to jaw : had enlargement of maxillary bone.

Stages of Life, Constitution

Girl, aet. 10, after falling upon an upright stick; enlargement of maxillary bone; Hekla lava 3d given for several days had no effect, but disappeared rapidly after Lava 31st.

Colored boy, aet. 15; exostoses of lower jaw.

Scrofulous girl, after injury to inferior maxillary; abscess and enlargement of maxillary bone.

Miss-, aet. 27; affection of right maxilla.

Man, aet. 35; neuralgia after extraction of tooth.

Relations

Compare : *Mercur.*, *Phytol.*, *Phosphor.*, *Silica*, *Stilling.*, *Sulphur.*

Leitsymptome und Charakteristika / Keynotes and Characteristics



Leitsymptome und Charakteristika / Keynotes and Characteristics

Übersicht

1900 - John H. Clarke

1927 - William Boericke

1900 - John H. Clarke

Characteristics. - I have chosen the single word Hecla in preference to Heclae lava, as being simpler and more convenient. The ash and scoriae of this volcano contain Silica, Alumina, Lime, Magnesia, with some Oxide of Iron. When travelling in Iceland, Garth Wilkinson noticed that the sheep in the vicinity of Hecla had immense exostoses on the jaws. Another effect noticed was the drying up of the milk both in sheep and cows. The finer ash which fell on pastures at a distance, was the most deleterious; the gross ash near the mountain was inert. In cows, post-mortem examination showed the intestines filled with ashes, hardened to a mass, and stomach coated over with a pitch-black membrane spotted with brown, and difficult to remove by washing; the jaw teeth were covered with a shining metallic crust. Several young horses died from lumps on the jaw-bones, so large as to cause dislocation. Sheep, when slaughtered, were found to be of bluish hue internally, and the intestines were friable. In many cases worms from two to three inches long, with pale grey bodies and brown heads, and a little thicker than a horse-hair, were found in the bronchia. In sheep the osseous and dental systems were much affected. The head-bones, and especially the jaw-bones, swelled and became so friable that when boiled they fell to pieces. The thigh, and especially the shin bones, swelled and bulged.

The jaws were sometimes covered with large swellings, which spread and were looser of texture and darker in colour than the bone; these could be separated from the bone without injuring it; but in some fatal cases a hole going down to the marrow was discovered under the swelling.

Garth Wilkinson adds to the above that he has used Hecla with excellent effect in toothache, gum abscess, swellings about the jaws and in difficult dentition.

Clinical experience has shown the power of Hecla to arrest many forms of bone disease, including osteo-sarcoma, scrofulous and syphilitic osteitis and exostoses. The swellings amenable to it are painful and sensitive to touch; < from touch and pressure. The glands are affected almost as much as the bones : "induration and infiltration of cervical glands, studding neck like a row of pearls." The right side has been more predominantly affected.

Relations. - *Compare* : Conchiol., Silic., Calc., Slag, Phos., Stilling., Sulph., Kali iod, Amphisb., Symphyt., Ruta.

Causation. - Injury to bone.

(John Henry Clarke, A Dictionary of Practical Materia Medica, vol. 1, London 1900, Hecla, Characteristics, p. 870-871)

1927 - William Boericke

Marked action upon the jaws. Of great use in exostosis, gum abscess, difficult teething. Nodosities, caries of bone, etc. Osteitis, periostitis, osteosarcoma; rachitis. Tumors in general. Bone necrosis. Necrosis and sinus after mastoid operation.

Face. - Ulceration of nasal bones. Facial neuralgia from carious teeth and after extraction. Toothache, with swelling about jaws. Abscess of gums. Enlargement of maxillary bone. Cervical glands enlarged and indurated.

Relationship. - Compare : *Silica*; *Mercur.*; *Phos.*; *Conchiolinum* (Mother of pearl; diaphysis of bone affected; parts extremely sensitive to touch). *Amphisbaena* (Snail-like lizard; great affinity for the jaw bones, worse by air and dampness). *Slag* (Great itching of parts).

(William Boericke, M.D., Pocket Manual of Homoeopathic Materia Medica, Ninth Edition, New York 1927, Hekla Lava, p. 320)

Kommentare / Commentaries



Kommentare / Commentaries

Übersicht

1911 - P. E. Krichbaum

1911 - P. E. Krichbaum

"The ash and scoriae of this volcano, containing Silicia, Alumina, Lime, Magnesia, some Oxide of Iron, and occasionally Anorthite and other minerals, triturated, was introduced as a medicine to the profession by Dr. J. Garth Wilkinson. Investigation revealed that the finer ash falling in more distant places had the most deleterious effects.

Dr. Wilkinson noticed that the sheep in the vicinity of Hecla had immense exostosis of the jaws, and that the milk dried up in both sheep and cows. Post mortem examinations in cows showed intestines filled with ashes hardened to a mass, the stomach coated over with a pitch black membrane spotted with brown and difficult to remove by washing, and the jaw teeth covered with a shining metallic crust.

These facts from a letter written by Dr. Wilkinson, betray to us that the harm is done by these accumulations upon the mucous membrane and also by deposits within the capillaries and lymphatics. If artificial occlusion of the villi is thus induced, what diseased condition of the human economy may provoke a similar state of affairs? Injury to bones. I feel to be a striking example. If therefore, we enter the region of bone degeneration we will find that Hecla is likely to achieve curative results.

Naturally in our desire to perceive a clear cut picture of the Hecla patient, we are led to study the various types of people who develop these exostoses and bone tumors. Generally it is a constitution weakened by some adynamic disease, syphilis, or scrofula. Especially are we to consider the individual in whom there is a general slowing down of the circulation, the always cold patient, or the one who, owing to a sluggish, lymphatic system, is prone to develop lumps, and nodules. Any bone injury which destroys little capillaries, may awaken a train of Hecla symptoms.

These patients suffer from chronic headaches. They have vertigo; here you find the impeded circulation, a red strand running through the entire symptomatology of Hecla, if you pause to analyze and translate the morbid effects. The vertigo may cause reeling as though the man was intoxicated. These fearful head pains are relieved by stimulants, alcohol, coffee, or tea, also a full, busy stomach gives temporary relief. Women with menstrual headaches will often declare that they like to go to the table. Digestion draws the blood from the brain and pressure is lifted. I do not say that Hecla will always cure this type of headache, but these conditions in our women patients frequently call for deep and careful investigation of many drugs. It is well to have a whole gallery of remedy pictures; in a dark corner you may find Hecla.

Of course in the headache or facial neuralgia caused by some carious tooth or injury to dental nerve, I feel very confident when I call your attention to Hecla. It is a remedy of great worth here.

When you find a polypoid growth beginning in the Antrum of Highmorii, and from thence spreading upward and downward, of immense size, with the face very sensitive to touch and pressure, aggravated by heat in general, though relieved by hot, wet applications, with the characteristic headache, Hecla should be studied. It is also to be thought of in troubles locating in the mouth, from a gum abscess to caries of the Maxillary bone.

Teething babies with rickets, or scrofula may be helped by Hecla.

A case under my care, gives a fairly good picture of the Hecla condition of jaw. A young man while visiting in Montclair in 1908 suffered from toothache of such an agonizing character that the dentist decided to draw the tooth. After two or three days' treatment by the dentist, the family with whom the young man was staying, insisted that I should be called. My diagnosis was caries of the left inferior maxillary, aggravated at the point of the extracted tooth. The gums were swollen, of a bluish purple color and very sensitive to touch. His condition was aggravated at night, by touch, and pressure. The pain prevented sleep.

One peculiar fact was the indifference of the patient, which showed the sluggishness of the Hecla subject. He had slight fever, and pus exuded from left lower bicuspid to and involving the incisors. Lach. Phos. and Mercury were given.

In about one week the patient was able to leave for home. Six months treatment from his dentist and family physician proved ineffectual, and he returned to Montclair to consult me. A specialist had advised the extraction of all the teeth, and a thorough removal of the necrosed bone. This the patient would not have done. Examination revealed nothing new, with the exception of a swelling under the jaw near the angle. He looked as if tanned by the sun, his eyes were lustreless, and his appetite poor, otherwise his one complaint was a taste of pus in the mouth, and the discharge. The place under the jaw soon opened and continued to discharge in spite of my best efforts to prescribe by mail, seeing the patient every six months for two years.

January 9th, 1911, he visited me, at which time probing the Sinus did not reveal any loose bone. The right upper jaw and descending ramus was swollen to size of a walnut with a discharge from a sinus near middle of cheek on the inside. At this late stage of the game, I prescribed Hecla 200th, in repeated doses.

April 10th, 1911, patient writes, "pulled out bone yesterday. Gave no trouble. Measures one and three-eighths inches by one-half inch wide at the widest part. Not much discharge from right side." He sent me a diagram of the bone, and only a few days ago writes again that he is contemplating matrimony. His health is fine.

I will mention a few remedies which are related to Hecla.

In Conchiolinum (Mother of Pearl) the trouble begins in the diaphysis of the bone, and generally remains there though it may spread to the epiphysis. It always attacks young subjects. The parts are extremely sensitive to the slightest touch, the swelling is at first soft but may become hard.

Silica, Ruta, Phos. and Calc. of course come to our minds when we read Hecla.

Amphisbaena a snail like lizard has an action similar to Silica. It has great affinity for the jaw bones. The swelling under this remedy is aggravated by air and dampness.

Slag is also a relation of Hecla in bone diseases, but Slag has great itching of the parts. Piles, constipation, and flatulency, intolerance of tight clothing, etc., are apt to be accompaniments. In Stillingia we find Syphilitic bone diseases. Pains are sharp and shooting, the ends of the bones and cartilages feel bruised. The mucous membrane is dry, the joints are stiff and there may be nodes on the bones in any part of the body. The pains are aggravated by movement, walking, the cold, wet weather, and of course a general aggravation at night.

The range of Hecla is not extensive, but as a compound it is an interesting study.

I have lately prescribed it for an old lady of 84 suffering with Paresis, and senile decay. She has a number of sluggish abscesses which have been obstinate and unyielding to any remedy. Hecla is rousing a little flicker of vitality. If this response continues, she may die witless, but clear of these distressing foul points of stasis."

(Hecla Lava, by P. E. Krichbaum, The Medical Advance, vol. 49 (1911), p. 638-642)

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