some perplexities, both in construction and pronunciation, to the beginner, and it is possible that there is not a man living who could intelligibly describe the principles upon which this and their other equally magnificent words are built.

In these slight sketches I have endeavoured to present some of the least disagreeable features of Greenland and the Greenlanders. In several respects the native of the present time is an advance upon his forefathers, but in others he has decidedly retrograded. The policy of the Danes, although far from perfect, is perhaps as good a one as can be devised for this peculiar people; and, although it is impossible to express any particular admiration for a system of administration which governs a country by means of brandy, it must be admitted that it is a very easy thing to point to natives who have been treated in a far more objectionable manner. At no time since the Danes have had possession of the land has there been any interruption to the good-will which has prevailed; and the indigenous population, instead of being exterminated by different processes, is, and has been for a long time, steadily increasing.

THE FATAL ACCIDENT ON THE LYSKAMM. Read before the Alpine Club on Tuesday, March 29th, 1870. By W. E. HALL.

IT is, I trust, unnecessary to say that the following paper has not been lightly undertaken. Under ordinary circumstances, to review after some months the sad remembrance of an Alpine accident would be as painful to the Club as it would be useless and unjustifiable. None of us would wish that the way in which a relation had died should be made a subject for public remark; and fortunately it has been very rarely that an accident has occurred of such kind that any good purpose would be served by dwelling upon its incidents. It has in most cases been easy at once to see that rashness or incompetence on the part of the victims, or of one of them, has been the cause of disaster; and until in some new order of things rash men listen to the words of prudence, and incompetent men are willing to be persuaded of unfitness, it is best that criticism should be silent, and that we should each draw morals for ourselves alone. If, then, I speak to-night, it is because in the particular instance the circumstances are not ordinary—because, in fact, they are such that it has become a positive duty to direct to them the attention of the Club.

At four o'clock in the morning of the 15th September last Mr. Chester left the Riffel to make the ascent of the Lyskamm. At a little before ten o'clock in the evening of the same day his guides, Johann Taugwald and Johann Kronig, returned with the news that he was dead. A few minutes after their arrival Mr. Rigby and I saw them. They were lying down in the guides' room, professedly in great pain, and professedly also unable to speak without difficulty. We were, in consequence, unable to extract from them a full account of what had happened; but the one, speaking in German to Mr. Rigby, and the other speaking in French to myself, gave separately an outline of the circumstances of the accident. According to their stories, which, though meagre, were consistent with each other so far as they went, the party had reached the summit at 2.45. The hour was late; they had, therefore, almost immediately to commence the descent. In coming down, Mr. Chester, being very tired, had stumbled several times, but he had got to the end of the narrow part of the arête without, as it would appear, an actual fall. At this point he insisted upon going to the edge—I am unable to understand of what—in order to look for traces of a dog which he had taken with him, and which had disappeared during the ascent. In going towards this edge he had fallen forwards on his face, and the spot being peculiarly easy, and the guides consequently not being alert at the moment, they had been dragged off their feet by his fall. The whole three had immediately bounded over an ice-cliff, and at last, after slipping down a slope estimated by the guides as being some eight hundred to a thousand feet in height, had lodged on the Grenz Gletscher beneath. The guides had both suffered great pain, and one was afraid that he had sustained grave internal injury. Mr. Chester had never spoken after the fall, but had lived for about five minutes. On this last point they were very clear. The fall had taken place at about four o'clock in the afternoon.

Such was the tale which fell in morsels from the lips of Taugwald, and which Kronig, though seemingly unwilling to speak at all, to a certain extent confirmed. Shaken, terrified, and in pain as they seemed to be, we refrained from pressing them for further particulars, and turned to make our arrangements for the recovery of Mr. Chester's body.

Most fortunately two other members of the Club, Mr. Fowler and Mr. Porter, were at the hotel, and about three o'clock A.M. they, Mr. Rigby, I, Peter Perrin, and nine porters started for the scene of the accident. The topographical indications afforded by the guides had led me to expect that

we should find Mr. Chester at the upper end of the base of that part of the mountain where a small hanging glacier and long snow slopes separate two rocky ribs partially covered with snow, one of which marks the termination of the arête proper. It was not without surprise that after vainly scanning the spot where I expected to see him, I at last saw a small black object much farther up, close to the point at which the route commonly taken in the ascent of the Lyskamm enters on the steep slopes to the right of the glacier. The slope is there not more than five hundred feet high, and at the top a cliff of ice of some sixty or seventy feet forms the pedestal, on which is supported a fan-like expansion of the arête, so broad and so easy that a party of which I was a member, in descending the mountain in 1861, glissaded down the slope from which Mr. Chester fell.

We found him lying on his back, his legs straight, with one arm much twisted, but with his head only slightly bent backwards, notwithstanding that the neck was broken. It was obvious that he had merely slipped, and had not rolled over and over in falling along the slope which stretched down from the ice cliff. The abrupt fall at the commencement would fully account for the fatal injuries which he had received, and the subsequent slide had tended rather to compose his attitude than to contort it further. But it at once occurred to me that three bodies falling together, and connected by a rope, must have rolled one over the other. It is barely conceivable that, when affected by the irregular impetus necessarily given to bodies of different weight falling one after another through a space of sixty feet, three men should afterwards have glided down a slope side by side with even motion. On looking to see whether anything existed on the face of the snow slope to confirm or to modify the suspicion which I had already conceived from this and from other matters which I will presently mention, I saw a single trough marking the line of Mr. Chester's fall, and extending about a third of the way up the slope. Above, the snow was too hard to allow of marks having been made. The trough was clean and narrow; no other trough existed on either side, and no irregular dents suggested the improbable hypothesis that the guides might have tumbled while Mr. Chester glided. The local evidence seemed therefore to point to the probability of Mr. Chester having fallen alone.

We already had knowledge of a fact which, though not unimportant in itself, acquired a value altogether new when looked at in conjunction with these local appearances. The rope—a new one—which had been used by the party had been

shown to me immediately after the arrival of the guides at the Riffel. I of course took possession of it, and afterwards put it into the hands of M. Clemenz, the district judge, in a condition identical with that in which I received it. Fastened at some yards from one end of this rope was a belt of webbing which showed signs of having been pierced by the buckle; somewhat farther on than the middle of the rope was another belt which had never been so pierced; two-thirds of the way between the second belt and the other end of the rope a loop which had been made for the hand still remained; the rest of the cord was loosely twisted so as to prevent it from trailing. It is eminently improbable that men whose nerves had been shaken by such a fall as that which killed Mr. Chester should have undone a waist-loop, and should have substituted for it a useless hand-loop, especially when they had before them a snow-journey, part of which had to be made in the dusk. I am driven to believe that the hand-loop existed before the fall. No traveller, especially if he were one so tired or weak as to stumble, would attempt to use a hand-loop, nor would he be permitted by his guides to trust himself to so inefficient a guarantee. I may assume that Mr. Chester was either in front or, as the guides themselves say, in the middle. In the former case he was attached firmly to a rope from which both guides could disengage themselves in a moment; in the latter case, he was liable to be thrown out of his belt by any sudden jerk. In either case, according to the appearance presented by the rope, it was probable that he had fallen alone.

It was not till later that we became acquainted with a third reason for distrust, the negative character of which ranks it with those which I have already mentioned. While we were away in search of Mr. Chester—that is to say, within twelve or fourteen hours after the return of the guides—an English doctor, who happened to be at the Riffel, surgically examined Kronig and Taugwald. He found that they both were much bruised and slightly cut about the face, but that, with the exception of a very slight bruise on the inside of the knee of one of them, and an equally slight bruise on the shoulder of the other, they were absolutely unhurt in any other part. Of internal injury there was no trace. They were not scratched nor rubbed; and their clothes were untorn. It would be sufficiently strange that two men should fall over an ice cliff 60 feet high, and should then tumble or glide for 500 feet more, without being seriously hurt, without even being bruised elsewhere than on the face; but it is so strange as to be hardly explicable that these two men falling unhurt for so far

should have been bound by a rope to another man whose neck and whose arm were broken, whose thigh was dislocated, and who presented other evidences of the violence with which he fell. The bodily state of the guides was such that, had it not been for the death of their companion, they would have been supposed to be guilty of gross exaggeration in saying that they had fallen even 100 feet; no one, however facile of belief, would have conceded the possibility of such a fall as that which they claimed to have undergone.

Yet another fragment of evidence of even more immediate significance we gathered upon the ground itself. Between two and three hundred feet higher than the body, and at a distance of about 400 yards in a diagonal direction up the slope, were a bottle and two handkerchiefs belonging to the guides. These things were of course not in the line of fall; neither were they in the line of ascent usually taken. On the contrary they were further removed than the body from that line; they were on a part of the mountain where under ordinary circumstances no one would go, because the slope is steep enough to demand longer time for its ascent than is required for the more circuitous route; but they were just on a straight line between the point where the ice-cliff could be turned and the highest point on the glacier which could be reached by men too hurried in their descent to wish to cut steps. The natural inference is, that the guides passed by this spot after the accident took place, and as they would certainly not have mounted again gratuitously after falling to a lower level, the discovery of the handkerchief and bottle adds greatly to the importance of such unfavourable inferences as may be derived from the facts which I have already mentioned. It is impossible to take refuge in the supposition that the wind may have blown the things from some point on the line of fall to that at which they were found. Putting aside the difficulty that the handkerchiefs and the bottle must have parted company in the beginning, and that so curious an accident cannot be assumed as that they should rejoin just at the beginning of the softer snow, when the impetus acquired by the bottle must have been considerable,—there remains the fatal objection that the things were found at a place nearer to Zermatt than that at which Mr. Chester lay, that the wind was blowing up glacier all night, and that the existence of any local draught was disproved by Mr. Chester's body being partially silted up on the side nearest to Zermatt, and being clear of snow on the other. It is needless to say, that had the wind changed he would have been silted up on both sides.

Connected with these grounds for believing that the guides did not fall with Mr. Chester is another matter, meaningless no doubt until a high probability is obtained that their story was untrue, but significant so soon as the facts about which I have already spoken have been allowed the weight which seems to me to be due to them. On our return to Zermatt, Kronig, in speaking with Mr. Rigby on the subject of the accident, expressed anxiety to hear whether Mr. Chester had been found with his head or his feet downwards. Obviously he was ignorant in which position the body was lying at the moment of their departure. If the guides actually fell with Mr. Chester, nothing is more likely than that they should have been far too dazed to notice anything with precision for some time afterwards. But if they were so far capable of observing as to know that he lived for five minutes after his fall, it is very hard to understand that they should have remained ignorant of his attitude. They must have spoken to him, they must surely have touched him, they cannot have left him till convinced by long and anxious watching that it was death and not a swoon that possessed him. Yet these men, with their wits collected enough to mark the exact moment of death, are unaware of the fact, far more easy to observe, that Mr. Chester lay with his feet downwards, and this too, notwithstanding that if all fell together they must have unfastened from his waist the rope which they brought back to the Riffel. I do not weigh upon the difficulty of believing that Mr. Chester can have lived for five minutes with his neck broken. I am informed that it is possible for a man to live under such conditions for such a space of time; although his neck was too much twisted backwards for me to think that his was one of these exceptional cases, I am bound, as no medical man saw him before he was moved, to give to the guides all the benefit that this possibility may afford.

One point more and I have done. It will be remembered that it was part of the story of the guides that Mr. Chester fell in looking over an edge to find traces of the dog which he had taken up with him, and which had fallen during the ascent. If it was known that the dog had fallen about a particular time, the place of his fall must also have been approximately known; and it may be presumed that Mr. Chester would not have looked for him at a spot, not only distant from, but unconnected with that where the poor animal was lost. Now the dog was still alive when we went up next morning. We could not see him, but his piercing cries came, as we all agreed, from that hanging glacier of which I before spoke, and which under-

lies the upper part of the arête. The place where he fell must have been an hour's climb higher up and along, than was that where Mr. Chester met his death. I must frankly say that I believe the incident of the dog was invented as a means of accounting for the occurrence of an accident at a place where the guides must have known that an accident would be looked upon as impossible by anyone acquainted with the ground. It is a place where one man might hold up two with perfect ease. That two guides would fail to hold up a single traveller, or that, failing through momentary carelessness to hold him up, they should be unable to arrest his tumble, is, to my mind, a marvel which I cannot readily accept.

I may be allowed to say parenthetically, that we were forced, to our great sorrow, to leave the poor dog to his fate. He was at a part of the mountain which it would have required longer time to reach than to get to the top; and not only was the morning somewhat advanced by the time that our arrangements for taking down Mr. Chester were completed, but bad weather came on so immediately afterwards, that a party which was detached under Mr. Porter to go to the point from which Mr. Chester fell, in order to examine any marks which might remain, and if possible to go on to the dog, were obliged to return without reaching the foot of the arête.

I have now stated frankly, and I hope simply, the facts and reasonings which lead me, I am grieved to think, irresistibly to disbelieve the story of the guides. Let me recapitulate in a few words. Mr. Chester fell either at a point in the natural line of route, or at one to which he diverged for the purpose of getting more easily down to the glacier. If he fell at the former point, he did so on snow of such gentle inclination that no traveller could have carried off two guides, however carelessly they were walking. If he went to the latter place, an act which I have shown from the position of the dog to be in itself improbable, he was standing on the edge of a perpendicular cliff. Is it conceivable that two guides would have stood in utter carelessness behind a traveller who had already stumbled several times, while that traveller was crossing over a precipice? Whether Mr. Chester slipped at some distance from the precipice or tumbled from its brink, he fell so far that his injuries are natural and the safety of the guides is unnatural. Arrived at the bottom, the guides, if their story be true, must have taken the rope from the body without noticing whether the feet or the head were downwards; and yet, dazed as they were by the fall, and insensible to obvious facts, they can fix the time during which Mr. Chester

lived. They must then, for no object whatever, have mounted for a considerable distance along the slope to the point where the bottle and the handkerchiefs were found, and have then again descended to the glacier. Finally, it must be remembered that there were marks of the fall of one body along the snow, and that there were no marks of the fall of more than one; also that the condition of the rope was such that it was unlikely that all three would have been sufficiently attached, and very likely that two would have been able to retain their footing while the third slipped out.

Against all this there is nothing to put but the assertions of the guides, which I have proved, meagre as they were, to be in some respects inherently doubtful, and two statements—one made by Peter Perren, the other by him and all the Zermatt men who went with us to recover the body. Peter Perren, three days after the accident, declared that he had seen three marks immediately under the ice cliff, such as would be made by three heavy bodies having fallen over it. He gave as his reason for not having mentioned this discovery at the moment, that he wished to spare our feelings. As we were in presence of Mr. Chester himself, such extreme consideration might seem to have been superfluous. He also said that he had noticed these marks at the moment when Mr. Chester's body was first seen. As it was I who first discovered him at a distance so great that it was with difficulty that Perren was able to see the body when it was pointed out, the marks, if they existed at all, must have been extremely conspicuous. Nevertheless, neither Mr. Rigby, Mr. Fowler, Mr. Porter, nor I saw any indication, however slight, of bodies having fallen on the slope beneath the cliff. For my own part, I looked carefully, and I came to the conclusion that the snow, almost ice as it was, was too hard for some distance to show any traces, whether of one or of three bodies. Perren had been told beforehand to direct our attention to anything noticed by him which could bear on the circumstances of the accident. I therefore dismiss his story as a clumsy attempt to shield his fellow villagers and fellow guides from the blame which he found had come to be attached to them.

The other statement made by Perren, in common with all the Zermatt men, is less material. It was to the effect that Kronig's hat was found close by Mr. Chester. This of course would only at most prove that the guides had at some time been with the body; but it is curious that the hat was immediately put into a knapsack without being shown to us, that neither we nor the one Oberland man of the party saw it in

the snow; nor were any of us except him shown it till after our return. I do not say that the hat was not found on the spot, but I have a right to say, that if it was found there, its discovery was very infelicitously used.

Perhaps I may be asked what story I propose to substitute for that of the guides. In a matter of this kind, the important point is whether or not the guides did their duty; and as it is possible that men might put themselves into a false position by telling an untruth, which seemed to them to be plausible, and incur through mere nervousness an undeserved blame in their very efforts to escape from it, it is only right to see whether the facts allow that such a loophole shall be presented to Taugwald and Kronig. I regret to say that I do not think that their conduct is susceptible of any such explanation. Mr. Chester, I have some reason to believe, was not a good walker. His pluck must have been very great, but though, as I am informed, naturally strong, he was too old a man to be able to make long expeditions with safety, and I have no doubt that he was always much more fatigued than he cared to acknowledge to himself. I think it very probable that he did in fact stumble in the arête. On the supposition most favourable to the guides, Mr. Chester at the moment of the accident may have cast off the ropes for some purpose, and may have fallen while walking alone. In this case they would have been greatly to blame for allowing a man who had shown shortly before that he was unsteady to be alone in any place where a slip could possibly have a serious result. But I am afraid that the non-perforation of the middle belt necessitates belief in a worse carelessness. When fresh in the morning, Mr. Chester would certainly have taken care that his own belt was properly fastened; one of the guides must therefore have been in the centre, and Mr. Chester must have been behind; that guide must have been guilty, for some reason or other, whether from mere carelessness or from distrust in Mr. Chester, of putting himself in the rope in a manner which he must have known to be useless. When turning to come down, either Mr. Chester himself put on his belt—which, according to the story of the guides, was then the middle one—or it was put on for him. In the former case, if he did not fasten it sufficiently, he must have been exhausted, and the guides were to blame for not taking care that the buckle was driven properly home; in the latter case they must have known that the belt was not perforated, and consequently that he was not safely attached to them. I am loth to suppose the last alternative to represent the truth, because I should then have to think that the guides

deliberately took precautions to prevent themselves from being killed in the event of an accident occurring. But whatever way the facts are looked at, whatever the cause of Mr. Chester being inadequately fastened, and whether he fell when apparently tied to the guide or not, it is impossible to avoid believing that their carelessness at the very least, and perhaps their cowardice, was the cause of the accident. Nor is there any doubt that they told an untrue story in order to cover whatever was blamable in their conduct.

When we returned to Zermatt an investigation was held by M. Clemenz. Our evidence was taken, as well as that of the guides, and of the men who went up with us to fetch Mr. Chester. M. Clemenz promised to me—and when Mr. Chester's brother arrived at Zermatt, to him also—that his decision and the grounds of it should be fully communicated to us. For a long time expectation that M. Clemenz would fulfil his promise naturally and necessarily closed our mouths. But when more than six months have gone by, and when a date, fixed after several letters as that in which the decision should arrive in England, has been passed by nearly eight weeks, it becomes necessary, if any good effect is to be produced during the coming summer by the publication of the truth, that the dilatory courtesy of M. Clemenz should no longer be waited for. I have no wish to express any opinion as to the conduct of M. Clemenz. I am content that my action should be sufficiently justified by the fact that like promises were made after the accident on the Matterhorn, and that they were never fulfilled. But I cannot refrain from saying that, whatever be the motive of his silence, whether indolence, or the forms of Swiss law, or desire to help the guides, its effect on the supposition of their innocence must be singularly unfortunate. We refrained for obvious reasons from cross-examining them, as we otherwise should have done, because we knew that an official inquiry was going to be held; we could not of course afterwards carry on an amateur investigation side by side with one which was legally instituted. The guides therefore might now say with some truth, that they are being condemned without sufficient opportunity for explanation having been afforded to them. I do not myself think that any explanation could seriously affect the facts upon which I ground my conclusions, but other cases may readily arise to which the result of explanations would be to exonerate at once an apparent culprit; and I cannot help uttering a protest, however useless it may be, against the secresy which the character of M. Clemenz or that of Swiss law has imparted to the judicial inquiry.

Note by the Editor.

A discussion took place upon the above paper, in which several gentlemen took part, and various opinions were expressed. Dr. Liveing expressed his strong belief that it was highly improbable that Mr. Chester could have lived for five minutes, or indeed for any appreciable time, after the accident took place. Mr. Rigby generally confirmed the accuracy of Mr. Hall's account; and gave additional details of his interview with Kronig after the accident. It was generally agreed, and it will, I think, be impossible for any reader of Mr. Hall's very clear narrative to doubt, that the story told by the guides is simply incredible. We have no reason to suppose that they fell over the cliff; and the discovery of the bottle and gloves seems to prove decisively that *after* the fall they passed by the spot where those articles were discovered; or, in other words, that they took the quickest line of descent towards Mr. Chester's body, going far enough aside to turn the cliff over which he had fallen. So far the case seems to be clear. Is there any reason for attributing to them anything worse than the negligence which led to the accident, and the telling of a false story afterwards to conceal that negligence? Two causes of suspicion seem to be alleged. Mr. Hall says that under certain circumstances he 'would be obliged to think that the guides deliberately took precautions to prevent themselves from being killed, in the event of an accident occurring.' I ventured to express at the meeting my belief that this suspicion was gratuitous. Carelessness in fastening ropes is unfortunately so common, that it is quite unnecessary to impute any deliberate intention to men who may be guilty of it. The point is one which, from the nature of the case, can never be cleared up; but the most obvious hypothesis seems to me to be, that the guides feeling themselves to be perfectly secure, as two guides with a single traveller would naturally feel themselves, either allowed Mr. Chester to fasten his own belt without taking the trouble to inspect it, or did it in a hurried and thoughtless fashion. I have constantly witnessed such carelessness, and though blameworthy, it is not in any way surprising.

Secondly, the conversation with Mr. Rigby is supposed to indicate that Kronig cannot have gone to Mr. Chester's body after the accident, as he apparently did not know the position in which it was lying. Mr. Rigby suggested that Kronig may have probably asked the question, from having told the story to other persons, and being not unnaturally anxious to hear it confirmed. It is clear that it would be very unfair to press any such inferences too closely. The presumption derived from the relative positions of the body and the articles dropped by the guides, seems to point strongly in the opposite direction. The articles in question, if dropped by the guides on their descent (as seems to be certain), show that they must have passed within a very short distance of the body; and it seems to me to be all but inconceivable that they should not have gone to it. They could not be certain, in fact, that Mr. Chester was dead; and their anxiety to reach him was, probably, the cause of their dropping two or three articles without noticing the loss. Why, then, should they not have gone to him? The only suggestion made was, that they might be afraid of avalanches. Anyone who has observed how careless guides generally are about such dangers,

and who will try to realise the state of extreme excitement under which they must necessarily have been, will, I think, be slow to accept this suggestion. If they had really felt such an alarm, they would have gone round by the usual route, instead of taking the short cut downwards. I fully believe that they went to Mr. Chester, and that Kronig's rather singular question may be accounted for in fifty ways, without imputing to them an act of almost inconceivable stupidity or inhumanity. I will venture, then, to suggest that the true story was probably as follows:—Mr. Chester went towards the edge of the cliff to look for his dog, or for some other reason. He slipped, and either fell out of the belt, which had been improperly fastened, or, as seems more likely to me, removed it himself. In either case, especially in the latter, the guides were highly to blame for their carelessness; and probably assumed very thoughtlessly that they were on a safe place. Mr. Chester then fell, and was instantaneously killed. The guides rushed down towards him by the quickest route, dropping the gloves and bottle on the way, and found that he was already dead. They then returned to the Riffel, composing a very improbable story on the way. In all this I see gross carelessness, and think that Messrs. Hall, Rigby, and Parker deserve our gratitude for the clearness with which they explained the circumstances. I cannot, however, agree with Mr. Hall in thinking that there is any serious ground for further suspicion. At all events, I fully agree with him that it is highly desirable that the result of the official investigation should be made public; and this is the point which it is now important to press upon the Swiss authorities. If gentlemen who are not accomplished mountaineers are to venture into the high Alps, the guides should use additional precautions; but as far as we can see at present, Kronig and Taugwald appear to have neglected the precautions which are in all cases most imperative.

THE ENGLISH LAKES IN WINTER. A Paper read before the Alpine Club on March 29th, 1870. By J. STOGDON.

DURING a short visit to the English lakes last Easter, it had struck me from a look down Helvellyn towards Red Tarn, over steep snow slopes falling away into dense mist, that the mountaineering capabilities of these hills in winter had hardly been duly recognised. So last winter, having a few days at my disposal, I found myself with a friend whom I will call X, installed in rooms at Elterwater, in Great Langdale, belonging to another friend, Y, in the house of one Tyson, who subsequently turned out to be the cousin of almost everybody in the valley. Elterwater is chiefly remarkable for a large powder-mill, which caused us much profitable speculation on the explosive force of gunpowder raised in our minds by a violent thunderstorm, during which one specially brilliant flash seemed to hang just over the mill. The weather up to the time of our arrival had been clear and frosty, but the day