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A HOLIDAY AMONG THE LAKES.

By the late Professor TYNDALL.

With Notes by W. P. HASKETT-SMITH.

[The subjoined paper, which appeared in the *Saturday Review* nearly half a century ago, is of great interest, and of course now difficult to procure. Prof. Tyndall reprinted a similar article, which he wrote on the subject of an ascent of Snowdon, but I cannot find that this one ever appeared in book-form.]

A HOLIDAY among the Lakes—far from the smoke and din and wear and tear of London! There is health in the very thought, and body and mind grow strong by anticipation. On the 15th April we started—reading at intervals, watching the landscape, the clouds, and the blue sky between them, and listening to a sanctified Bolton manufacturer, who would persist in singing hymns, and in whistling hymn-tunes when his larynx was weary. The cold augmented sensibly as we sped northwards, and the vegetation seemed much less forward than that which we had left behind. In the month of January, the same temperature reigns from the English Channel to the Shetland Isles. The isothermal lines then run north and south through England and Scotland; this equalization being effected by the Gulf-Stream which washes our northern shores. But it is only in mid-winter that this effect is produced. At mid-summer the isothermals run sensibly east and west, the influence of the Gulf-Stream being then masked by the more potent influence of latitude. In the month of April the latter influence also tells, and the further we travel northward the colder it grows.

On the morning of the 16th, while a sunny gleam shed itself over woods, and hills, and water, we pushed from the

shore of the lake at Windermere village, and rowed towards Ambleside. But nature is fond of quick mutations amid the mountains—the “gleam” vanished, and an angry scowl from the clouds blackened the water. Our prudent oarsman suggested the propriety of making for the land. Two of us, therefore, quitted the boat, while a third doubled a cape and took us in again in a sheltered bay, at the opposite promontory, at which we again landed and watched the storm for nearly half-an-hour. The little lake looked quite grand in its anger; the wavelets rose and spluttered, and shook their little manes, as if in mimicry of those of the ocean; while their crests were doubly white by contrast with the unilluminated water. Large snowflakes scudded horizontally through the air as if deprived of all tendency to fall towards the earth; and these were succeeded by a light hail, which became even feebler, until at length the wind sank, and the heavens unfolding themselves like a blue banner in the north, invited us to proceed.

So much for the aesthetics of the scene—let us now look at its science. The whiteness of the crests of waves is known to be due to the air entrapped and broken up in the water when the summit of the wave falls over. The “murmurous” sound of the waves is due to the rupture of the air bubbles thus formed. The rippling sound of streams is due to the same cause; where a ripple is heard bubbles may always be detected. With regard to the billows themselves, everybody knows that the advance of a wave is the advance of a form merely; the water which composes a wave at any instant does not move forward. A waterfowl, for example, on the crest of a billow is not borne onwards, but has apparently an up and down motion, imparted to it as the waves pass under it. In reality, however, the motion is not up and down. The fowl is carried round, as if upon the circumference of a wheel; it describes a curve more or less approaching to a circle, and every individual particle of water which constitutes the wave does the same. But experiment has proved that small waves propagate their motion downward through a depth of 350 times their own height. Assuming, then, that the waves of

Windermere, on the day in question, were two feet high—which is a moderate estimate—they would probably be capable of producing a motion similar to their own at a depth of twice 350, or, 700 feet. But the greatest depth of Windermere is only 270 feet; so there is little doubt that the whole lake was agitated to its bottom. We are therefore warranted in concluding that, while the storm continued, all the particles of water which the lake contained were running round in circles. And they could do this without any confused jostling, because their revolutions were successive, one particle communicating its motion to another, and accepting in turn, from a neighbouring particle, an equivalent for what it had lost. Such is the rhythmic dance of atoms—such the soft circling of liquid wheels—which a gust of wind can call into action!

At Ambleside two of us landed, and bidding the third goodbye, we walked through the little town, and visited the now forsaken nest of Wordsworth, at Rydal Mount. The odour of poetry seemed to hang round every shrub, and seat, and grassy knoll. Thence to Grasmere, where we spent a quarter of an hour by the poet's grave. A clear streamlet ripples near him, a few trees rustle their branches overhead, and a slab of dark slate, which might be purchased for five shillings at the quarry's mouth, bears the name of William Wordsworth, and marks the poet's place of rest. Our object that day was to scale Helvellyn; and diverging from the Keswick road a little beyond Grasmere,* we ascended a gorge,† to the right, Grisedale Tarn being our first landmark. At some distance in front of us was a barrier stretching quite across the ravine, and over its centre a white cataract fell.‡ We supposed that the tarn must lie behind the dam, but on mounting the latter we found at the other side a grassy basin, which might have been the mould of a tarn in ages past. It was clasped round by hills, and the air was so calm, and the sun so warm, that a local summer seemed to reign there, while ice and

* The usual track turns off quite a mile from Grasmere; probably, therefore, the Professor took the path which begins not far from the "Swan" Hotel.

† *i.e.*, Tongue Gill.

‡ *i.e.*, Tongue Gill Force.

winter ruled the heights around. A higher barrier was still in front of us, and here we encountered the keen greeting of the north wind. The snow at the summit had been melted and recongealed, so as to form masses of solid ice. The same process had taken place along the entire slope which we now descended—the liquified snow seemed caught in the act of trickling down, and was frozen to mimic glaciers upon the mountain side. All the summits round us were white, and it required no great stretch of imagination to fancy ourselves in the heart of the Alps. Grisedale Tarn was now before us, dark and lonely. We passed it, and assailed Helvellyn at the end of a long ridge* which juts southwards from the mountain. We were soon above the snow line, and found the top of the ridge thickly covered. As we walked towards the summit, the mountain fell precipitously to our right, and along its tortuous edge ran a beautiful snow cornice, bending gracefully in and out so as to suit the indentations and protuberances of the mountain. The north darkened as we advanced; and dense cumuli continued to overlap each other, waxing ever gloomier, until at length, in one direction, the blackness of a starless midnight met the gaze. The northern mountains,† raised by an optical illusion to far beyond their usual heights, projected their blackened forms against a ghastly neutral tint which lay behind them. A keen wind now swept over the mountain, and augmented in strength as the blackness drew near. The cold was intense, and seemed to split and scarify the skin of the face. The storm for a time seemed divided by the mountain, advancing right and left, and pouring its frozen contents into the flanking valleys; but minute crystals of snow, flying through the air with arrowy velocity, at length began to hit us. These quickly thickened to large flakes, and we were soon amid the densest gloom, battered by the blinding meteor. Here was surely an antithesis to the heavy air of a London laboratory. The wind entered our clothes, and seemed

* *i.e.*, Dollywaggon Pike.

† These would be Saddleback and the Caldbeck Fells.

to search our fibres through and through. We felt the contrast and enjoyed it:—

“There was freshness in the mountain air,
And life that sleepy ease could never hope to share.”

The gloom gradually diminished as we advanced, the descending snow dwindled to a feeble hail, the wind lowered and finally we emerged north of the storm, with an unclouded heaven above us, and the most perfect calm around.

It was a day of wondrous atmospheric effects—indeed, we had scarcely seen anything grander among the Alps themselves. The successive snow storms resembled a series of undulations. There was first a rush, then a lull, then another rush—the middle point between two rushes being absolutely without motion, as if each storm, like an elastic ball striking upon another of equal mass, had yielded up its entire motion to the neighbouring air and come itself to rest. The motion, however, was a true translation, as testified by the snow driving past us from its birthplace in the north. The snow was indeed an admirable indicator of the state of the atmosphere at a distance. Right and left of Helvellyn it fell copiously, and as it descended it was drawn into long vertical striæ, which again grouped themselves into distinct columns which brushed with their ends the mountain sides. The effect of friction was well shown. The lower portions of the snow columns were retarded by the earth, while their upper portions moved forward unimpeded; and the consequence was, that when the columns were seen at right angles to their line of march, they leaned forward. Storms have been predicted by the barometer hours before they were felt, and these leaning striæ furnish us with a key to the phenomenon. The whirl of a cyclone, for example, which reaches high into the atmosphere, may be active in the air vertically over a place, and this affect the barometer long before the base of the cyclone, which is held back by friction, has reached the same locality.

The summit was now at hand. Upon the highest point a mound of stones is erected, which bears the weathered stump of a flag-staff, once used as a signal by the Ordnance Surveyors.

Northward the mound was backed by snow, but on its south side were warm rocks and brown sunny shingle. Here one of us lay down while the other descended to inspect Striding Edge and the Red Tarn. The western face of the mountain is wild and grand, presenting the appearance of a vast crater, the centre of which is now occupied by the tarn, while Swirl Edge on one side, and Striding Edge on the other, resemble ridges of scoriæ which had been ejected from the crater at some distant date. Swirl Edge expands at its extremity, and thrusts forward the bold buttress of *Catchedecam*. The setting of Scott's poem was all there, except "the eagle." With regard to the Edge which proved fatal to Mr. Gough,* it is by no means formidable-looking to a practised mountaineer. In foggy weather it might perhaps be difficult, but under ordinary circumstances a second or third-rate climber, with his muscles in good condition, would be quite safe among its crags. But it might be otherwise with an exhausted man; and there is scarcely anything more bewildering, or which robs with greater certainty the heart of hope and the limb of energy, than a snow storm amid the difficulties of a mountain. After long battling, a dull apathy seizes the climber; he longs for rest, and perhaps lies down; an irresistible drowsiness assails his numbed faculties—he falls asleep, hoping perhaps to wake again, but it proves to be the sleep "which knows no waking."

While we remained upon the summit, the north again blackened. No shelter was near save the mound of stones, and here we resolved to remain and witness the storm. Dancing for ten minutes upon the shingle, we warmed our wet feet; and when the north sent its squalls upon us we betook ourselves to our shelter. The wind was furious, and the air all thick with the flying snow. Looked at against a brighter portion of the clouds, the flakes seemed like a multitudinous flight of insects. Added to the snow of the clouds was the snow of the mountains, which was tossed hither and thither,

* The causes of Mr. Gough's death are, of course, quite unknown, but there was nothing to show that he was a climber, or that he was trying to ascend the Edge.

twirled round and round, and carried forward in cloudy masses, which reminded one of the stalking sand columns of the Sahara. The play of the wind, like the chant of a High Mass which we once heard, was elevating for a time, but like the latter it lasted too long, and we wished to see the end of it. At 5 p.m. it lulled for a moment, and we set out; but the end of the storm contained its chief energy. It caught us on a plateau,* where the snow lay deep, and shook us furiously. At times we had to incline our bodies considerably from the perpendicular to counteract the atmospheric thrust; while the sudden withdrawal of the resistance often caused us to stagger. There was something suggestive of madness in the demeanour of the wind—a wild unreasoning fury, like that of a woman with strong feelings, and little intellect to guard them. The frozen crust which here overlaid the snow was torn up, and the softer stuff beneath was whirled round us and dashed against us as if urged by personal hate. This exacerbation ended, the storm lulled again, the sun appeared on the western slope of heaven, and we scampered down the face of the mountain to the Keswick road.†

Between Legberthwaite and Keswick we were again assailed by a snow-storm, which continued for an hour. Evening now drew near, and the west brightened and kindled, until at length the clouds that floated there burned with the hue of a carmine-coloured flame. Behind us was Helvellyn, and the aspect of the mountain, for a time, had in it more of heaven than earth. The sky above it was of a pale ethereal hue, but the mountain seemed to be changed to something of a similar essence. It rose, light, airy, and unsubstantial, as if it could tremble in unison with every thrill of the ether above it. The appearance was quite magical, and is by no means common; for, during a subsequent excursion of five days, we never saw it once. As evening advanced, and the sun's beams

* This may be the shoulder of Raise, just above the summit of the Sticks Pass, or else near the point where the pony track from Thirlspot joins the main ridge.

† At Thirlspot or, north of it, at Stanah Gill.

had to traverse more and more of the atmosphere, the redness of the illumination augmented. A last snow shower moved with its trailing hair along the sides of Blencathra and through the adjacent valleys. The sun had just set for us, but the evening glow fell upon the descending shower, and produced an extraordinary effect. The air became more calm, and the west for a time more beautiful. The sun himself, exciting evaporation and disturbing the thermic equilibrium of the air, was no doubt the cause of the squalls and storms which we had encountered during the day. After his withdrawal peace was proclaimed, and the tinted clouds hung in the west with scarcely sensible motion. One by one their glories faded; the bloom of the transmitted light was gradually replaced by the reflection from the sky; and the floating masses at length lay dead and ghastly in the cold grey air.

On the morning of the 17th April, we slowly climbed the slopes of Skiddaw—a mountain of noble mass and fine form, with warm brown heather clothing his haunches like fur. The summits seen from Keswick are not the real ones—the highest point lies nearly a mile behind. We mounted them in succession, and found ourselves finally in shelter of the Ordnance Surveyor's mound. Two posts were erect there, to which the snow clung, being drawn out by the wind like the filaments of a white beard.* The structure of these clotted masses was remarkable. In the solid condition, the particles of ice must have exerted their crystalline forces, and laid themselves, in obedience to these forces, side by side and end to end—the result being a structure which resembled a frozen moss. On the windward side the particles had built themselves into little white cockades, having central stems and branching feathers; the central portions being delicately veined at right angles to the direction in which the snow had been urged. It resembled a microscopic case of glacier lamination, and the very pressure to which the latter is ascribed seemed to have its representant in the force of the wind.

* The finest specimens I remember in this country were on Snowdon one January a few years ago. Some of the snow-feathers were fully 18 in. long.

Among the fragments of slate upon the summit we found numerous examples of cleavage and stratification running across each other. It has long been known that both phenomena are distinct; and, many years ago, a German observer inferred, from the condition of the fossils contained in slate rock, that the mass containing them had been forcibly compressed. The subject has been recently revived in this country, new cases of pressure have been discovered, and it has also been shown that pressure is sufficient to produce the cleavage. Slate rock may be triturated to a mud similar to that of which it was originally composed; and this mud may be converted by artificial pressure into fissile slate. Thus it appears that to produce our writing tablets and roofing materials, nature has been squeezing, probably for ages, the sediment of ancient rivers in her adamantine presses.

We descended the mountain by a route* which bristled with the spikes of weathered slate, towards Bassenthwaite Water. All along we found ourselves in the track of the sun's reflected rays, while the ripples ran and trembled in burnished curves over the surface of the lake as if their motions were regulated by music. Next morning we rowed from Keswick to Lodore, where we landed and advanced up Borrodale. The slate quarries on our way interested and instructed us, and near the so-called Bowder Stone we discovered the evidences of ancient glacier action. The rounded forms of the rocks first attracted attention, and closer examination left no doubt upon the mind as to the agency by which they had been rounded. Weathered as most of them were, it was difficult to detect the finer scratchings; but the larger flutings and scoopings-out were as palpable as they are to-day in the glacial valleys of the Alps. Arriving at the junction of two valleys,† we left that which led up to the Stake Pass on our right, and ascended Greenup, from the high plateau of which

* By Carlside.

† Professor Tyndall has overlooked the fact that he must have already turned out of the main valley near Rosthwaite.

we could plainly see the extended field occupied by the ancient glaciers. Our aim now was the Langdale Pikes; and, through swamps and snow, we reached two summits* which we supposed to be the ones we sought, but which really took us far away from them. On the second of those summits we discovered our mistake, and soon repaired it. We climbed the Pikes in succession. They are not lofty, but precipitous and bold, and they command a charming prospect.

Descending from the Pikes, one of us proceeding in a vertical plane, climbing and descending as the land required, towards Angle Tarn†; the other made an easier circuit round the pass of the Stake. We met and crossed Eskhause together. Great End was at our left, with huge icicles dependent from its ledges, and on the summit of the "hause" the snow lay deep. As we approached Sprinkling Tarn, magnificent cases of glacier action unfolded themselves. Round about the Tarn the rocks are all ground and polished, some flat, some dome-shaped—their associations with the Tarn suggesting the idea that the hollow which it fills had also been scooped out by the same agency. On some of the "domes" we found angular blocks which had been stranded there when the glacier retired. The sphere of action was so distinct, and its character so pronounced, that the imagination involuntarily restored the ice to its ancient reign, and the Scawfell glaciers were presented to the mind's eye as they existed before the advent of man.

These facts are not without their application at present, when glaciers constitute a topic of such general interest. A warm contest was waged for a considerable time between the adherents of the so-called sliding theory of Saussure and the viscous theory of Professor Forbes. The facts most favouring their own views, were, of course, brought most prominently

* At the head of Greenup they may have turned left (north) instead of right, and so found themselves on Ulscarf.

† To proceed from either of the Pikes to Angle Tarn "in a vertical plane" (which is professorial English for "a bee line"), would involve a precipitous descent of 1500 feet or more, and a subsequent ascent of nearly as many. The shortest reasonable route is more like a quarter-circle than a straight line.

forward by the rival advocates, but the supporters of the viscous theory had the inestimable advantage of being better acquainted with the actual phenomena than those were who happened to be their opponents. The consequence has been that the points favouring the viscous theory have been so multiplied, and so ably handled, as to drive the antagonistic hypothesis completely from the field. But let us look soberly on the facts above cited. What is it that grinds, scratches, and polishes the rocks, and scoops the land into basins which form the moulds of mountain lakes and tarns? Assuredly all these actions must be due to a sliding of the glacier over its bed. In the bottom of the glacier, stones and pebbles are set like emery (?) and it is the bodily motion of the gigantic polisher that accomplishes the work. Hence the sliding theory is indubitably true; but it is far from being complete. Ice possesses a power of yielding to great pressure, of which Saussure had no notion, and which Forbes was the first to bring prominently forward; and to this physical quality, call it what we will, a portion of the motion is also due. So that instead of either theory being true to the other, both of them must be invoked to account for the observed phenomena.

At Wastdale Head we were in the vicinity of the highest land in England, and felt a natural desire to stand upon the topmost stone. On the morning of the 19th we quitted the farmhouse* in which we had found good food and shelter, crossed the valley, and climbed one of the spurs of Scawfell.† Mr. Ruthven's map, and a few words from our agricultural host, constituted our only guidance. Turning to our left when we reached the top of the ridge, we proceeded gently upwards until a point was attained‡ from which we could see Sty Head Tarn across a shoulder of the mountain. Here we turned to the right, and picked our steps amid snow and broken boulders, until the brow of an incline being attained, we saw

* This may be either Burnthwaite or Rawhead.

† *i.e.*, The shoulder of Lingmell.

‡ Between Lingmell and The Pikes, and near the head of Piers Gill.

the summit of Scawfell Pike before us. Crossing a plateau we reached a heap of disorganised stones—the ruins of a huge mound, with which nature had capped the mountain, but which the frosts had torn to fragments. Stepping from stone to stone we reached the small artificial mound which marks the highest point, and on the sunny side of which we unlocked our scrip and brandy-flask, and allowed ourselves the refreshment which we had earned by our climb. It was a glorious day, the sky bright and blue, the sun warm, though the breeze was keen, while mountains, and valleys, and lakes, were all revealed without cloud or mist to mask their forms. We lay in the shelter for an hour, cozy and warm, permitting the scene around us to get more intimately woven with our thoughts. But Scawfell rose to the right, turning towards us a black precipitous flank, and separated from us by the chasm of Mickledore. We had found appalling accounts of this gorge in all the guide books, and we inferred that it was a rift in the mountain, bounded by terrific precipices, which one or two “adventurous dalesmen” had succeeded in crossing at the imminent peril of their lives. The picture drawn of the dangers of the place naturally rendered it an object of interest to us; and though we had no intention of placing our necks in peril, we thought we might, without risk, inform ourselves of the general character of the gulf. We therefore descended towards it, and seldom has it been our lot to witness so strong a divergence of the actual from the ideal.* The gulf dwindled to a practicable little ravine, and the passage of Mickledore was not even effected by crossing it; but was made along a little saddle which stretched with a gentle curvature from mountain to mountain. We thought of the brave damsels whom we had seen tripping across Les Ponts, scrambling down l’Angle, or squeezing their decrinolined bodies through the cleft of the Agralets. What would they have thought of Mickledore? Scawfell and its Pikes, and Mickledore added,

* It is not quite clear what kind of “gulf” they expected to find. Possibly they had imagined that it would be necessary to pass through a ravine with walls on either hand, instead of crossing it.

would have been merely an appetizing morning ramble for these fair Amazons.

The fact is, Mickledore can hardly be called a chasm at all. There are some noble crags near it, and the echoes of the place, bounded as it is on one side by Scawfell Pike, on the other by Scawfell itself, are wonderful. As we shifted our positions they babbled to us now from one crag, now from another, like the voice of a ventriloquist—the sound appearing to come to us at different times in totally different directions. The difficulty connected with Mickledore belongs, not to the gorge, but to the ascent of the opposite mountain.* This, we confess, would be rather formidable to a lady, and on the day to which we now refer, its difficulties were a little augmented by the frost and snow. We tried the cliffs at one place,† reached a platform, rounded a crag, and found ourselves upon a ledge with smooth vertical walls above and below us. We retreated and tried a neighbouring point.‡ The mountain was broken into rocky ledges, from the edges of which long icicles hung like stalactites, while stalagmitic heaps lay upon the ledges beneath them. These we were obliged to remove to render our footing secure, but, this being once effected, the danger was very trifling. Fifteen minutes' effort carried us over all serious difficulty; and the ascent afterwards, though steep, and sometimes demanding both hands and feet, was perfectly easy. Of course this is altogether a term of relation. There are people to whom Primrose Hill would not be easy, and, to persons given to giddiness, or lacking sufficient sureness of foot or strength of grasp, Mickledore is not recommendable; but, to any ordinary cragsman it presents a pleasant bit of mountain practice, and nothing more. It might, perhaps, be stated generally, that as far as the mountains are concerned, one

* This cliffs, between which a gorge lies, are surely part of the gorge itself.

† This is easily identified, being at a spot only slightly to the east of the line of Mickledoor ridge.

‡ This is, of course, the usual route, starting a few paces east of the point where he made his first attempt.

might undertake to walk through Cumberland and Westmoreland, in any given direction, without deviating a hundred yards from a straight line.*

From the summit of Scawfell we scanned the grouping of the surrounding mountains, examined the magnetic condition of its rocks, and, having secured a mental photograph of the scene, descended. A steep slope covered with loose shingle led down to the valley to our right, and choosing a place where the debris was fine, we glided down the mountain as Alpine climbers descend slopes of snow. At first we stood erect, but subsequently tried sitting. The shingle glided beneath us, and heaped itself at intervals as a barrier in front, but a slight pressure upon the staff lifted us over the barrier, and we slid swiftly down amid the rattle and ramble of companionable stones. The day continued fair till sunset, but, as evening advanced, Great Gable appeared to carry on a conflict with a grey cloud which assailed his summit, and which boded no good for the morrow. The morrow came, and streaks and patches of dirty clouds disfigured the blue of heaven, while the general air was thickened by a dusky haze. We started early to ascend the Pillar mountain, which had been pointed out to us by our host. Its apparent summit was in sight, and one of us went straight up the mountain towards the top,† while the other pursued a more gently sloping couloir to the left. On reaching the topmost ridge, each found himself alone, enveloped in impenetrable fog, which rolled, and boiled, and eddied from side to side of the mountain. The fog tearing itself asunder at intervals, high precipices and deep

* Many people have, after reading this passage, expressed a strong desire to lay out a course for Professor Tyndall on these lines. It must, however, be remembered that there are few cliffs which are unclimbable for a continuous width of 200 yards, so that one could hardly find a really imposable course.

† This is not easy to follow if we are to take it literally. Any man in his right senses would either incline right towards Blacksail, or follow up Mosedale on his left to Windy Gap. Probably one (no doubt the same who took the short cut from Stickle Pike to Angle Tarn) went up direct from the foot of Blacksail, and the other by Windy Gap.

black gorges showed themselves to the right. Half-concealed and half-revealed, their gloom added to their grandeur. With compass in hand we clambered over the craggy ridge in search of our companion, shouting his name, but receiving not even an echo in reply. We at length met each other, and before we got clear of the mountain, had occasion to feel the blessed aid which the magnetic needle renders to man. Returning along the ridge, we met a shepherd, and he undertook to point out to us the direction in which the Great Gable lay. His instructions finished, we took out our compass to secure the bearing; but on looking at it, he exclaimed that he was wrong. In the gloom he had mistaken his position, which he now corrected, taking us to another point, where we parted company. We crossed Blacksail, and walked for an hour over broken boulders along the mountain side.* Coming to a steep gorge, partially filled with snow, we inferred that it would lead us to the summit of Great Gable. We ascended it, the fog cleared a little, and we found ourselves upon the top of Kirkfell.† The air, by fits, became clearer, and we saw Great Gable in front of, and above us. We descended Kirkfell, crossed the saddle, assailed Great Gable, and soon found ourselves upon its weathered apex. The view was grand, and the mutations of the atmosphere were wonderful. We chose the shingle for our descent, and in manner already described, went swiftly and pleasantly down the mountain. Next day we walked, partly by path and partly by no track, over the mountain heads to Coniston, wild icy winds having cut our cheeks upon the shoulder of the Old Man. In the valley, below the copper mines, we found some excellent specimens of striated rocks; the substance was hard, and had been protected from the weather by a layer of drift. The groovings were as plain and sharp as if they had been cut by the glaciers last year. At Coniston we remained a night, and saw there the magnificent

* Probably tending upwards into Baysear Slack on the Ennerdale side.

† This is one of the commonest mistakes, and even now when the hills are so much better known, it is constantly made by climbing parties in foggy weather.

streamers of the 21st. The next day we walked to Windermere, and that same evening were immersed in the smoke of Preston.

