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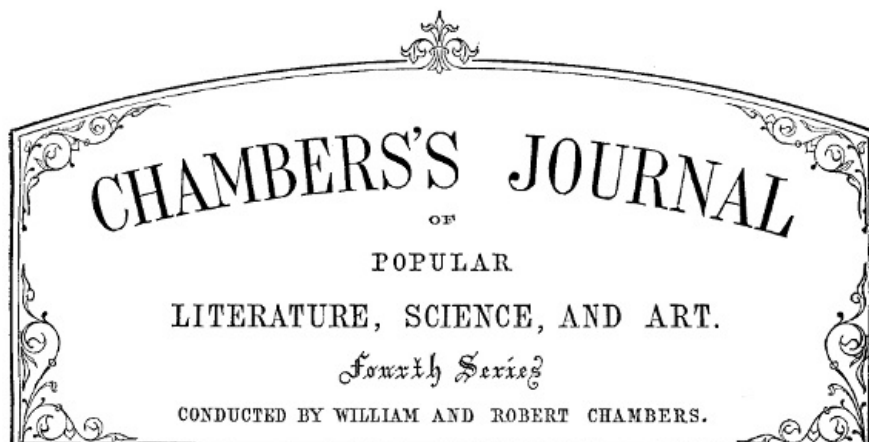
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**CHAMBERS'S JOURNAL
OF
POPULAR
LITERATURE, SCIENCE, AND ART.**

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PETER BOTTE.

IN the island of Mauritius, in the Southern Ocean, stands Pieter Both (or Peter Botte), one of the strangest shaped and most inaccessible mountains in the world. From the sea it is most calculated to impress beholders. Its quaint shape towers above the rugged mountain mass which again dominates over Port-Louis; and its still quaint name dates from so far back as 1616, when Pieter Both d'Amersfort, a Dutch admiral, or General of the Sea, as he is described in the records, happening to be shipwrecked on the island, was perpetuated by name in the mountain which cast its shadow across his drowned body.

The travellers' tales which are heard beyond the seas of the ascents of a mountain, insignificant in size, but by reputation ranking with monarchs of Alpine celebrity, have contributed to lend a grandeur and a mystery to Pieter Both in the imaginations of those who approach him for the first time. Though various ascents have been made from time to time (one of which was described in this *Journal* as far back as 1834), that made in June 1876 by a party of eleven seems to have been of special interest, as the following narrative, from the pen of one of the party, will shew. His story runs as follows:

An Indian, Deebee by name, a carriage driver by calling, by repeated ascents has made himself so much at home on the mountain as to be able to arrange a system of ropes and rough rope-ladders by which any one with a good head and fairly strong muscles can reach the top with comparative ease. Deebee is a short square-built East Indian, with a pock-marked face, whose dress on the last time I saw him was a soldier's old tunic, and a lady's 'cloud,' also old, about his head and chin. This worthy, after the preliminaries are settled with the leader of the expedition, purchases a coil of two and a half inch Manilla rope, arms himself with a wonderfully battered horse-pistol and a broken cutlass, takes into his confidence sundry others of his countrymen, and starts up the mountain the day previous to that on which the ascent is to be attempted. Upon the 'Shoulder,' which I shall presently notice, he has built a small hut, where he and his band sleep; to me, who saw it empty, it seemed just capable of holding half one man, with the contingency that his other half would dangle over a precipice some hundreds of feet high. In the morning the ropes are fixed; the 'Ladder Rock' being ascended by means of a pole; the pistol is used to fire a line over the head, by which the rope is gradually hauled up; the cutlass is for cutting the rounds of the rope-ladders from the bushes; so that if all goes well, when the party gather on the 'Shoulder' they will see above them the whole apparatus, strangely suggestive of the Old Bailey on hanging mornings, with Deebee and his crew clinging thereto—a black Jack Ketch to perfection.

Pieter Both itself is one of a score of peaks situated in the rim of a gigantic crater, which can be traced at the present day from itself on the north to the Black River Mountains on the south, a distance of more than twenty miles. A mountain called 'The Pouce,' so called from the resemblance of its peak to a man's thumb, lies immediately above Port-Louis, and forms a well-known feature in the views of that town. After the Pouce, which is thirty-six feet only lower than Pieter Both, the crater-wall becomes a wall indeed. Its northern face falls down in sheer precipice to Pamplémousses, two thousand feet below its crest; the reverse, no less steep, facing the valley of Moka, green with sugar-canes, and fifteen hundred feet below. This wall is broken into several peaks, of which the last is Pieter Both, having an elevation above sea-level of two thousand six hundred and ninety-eight feet, according to a recent survey made by the colonial surveyor.

At La Laura, a sugar-mill about ten miles from Port-Louis, the final arrangements are made for carrying up the provisions and other impedimenta, including on this occasion a photographic apparatus; and that satisfactorily arranged, comes a trudge of a mile along a gently ascending cane-road.

As the path nears the woods we find their margin impervious with the matted undergrowth; the bright green of the wild raspberry, with its hairy fruit, and long straggling branches armed with fearful thorns; the scarlet and orange blossoms of the *Lantana*; while the snowy white and pink blossoms of the many other species of underwood crowd in beneath the shade of the taller trees in a many coloured parterre.

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Side by side with many other curious varieties of trees will be noted the fluted stem and broad spreading top of the mighty Sambalacoue, now fast disappearing under the axe. On either side of the road which winds along this forest line are the tall sugar-canes, like walls high above our heads, the silver-gray blossoms waving in the softly blowing trade-wind; the rain-drops hanging from their leaves, falling in showers, and giving a none too welcome hint of slippery work a little higher up. Between Pieter Both and the mountain ridge that joins him with the Pouce is a steep gorge, wide at the base, narrowing gradually till it ends abruptly in a gap some fifteen yards across, and about four hundred feet below the summit. You can climb up to this gap, but it requires to be cautiously approached, for on looking over its edge, sharp and knife-like, you will find yourself looking down a precipice of naked rock some two thousand feet deep. The lookout is grand beyond description, and you will make out Port-Louis harbour, looking about the size of the Round Pond in Kensington Gardens, and Pamplémousses Church a dot immediately below you.

The path ends with the canes; and that which we follow after leaving them we make for ourselves. But upwards is the right way; you can't go wrong, for the ravine is like a funnel cut in half, and the easiest slope lies in its centre, to which we all gravitate by a sort of 'natural selection.' The forest is dense under foot and overhead; perhaps it is as well that it is, for without clinging on to the branches and tree-stems, and swinging bodily by them up bad places, the lower part would be as difficult as the upper. The forest primeval, silent and gloomy, shuts out the light,

and the air feels hot and stifling. Dead trunks lie rotting on all sides, mere touchwood many of them, resenting our footsteps by a cloud of dust; giving homes to a variety of lovely ferns, including the hartstongue, which grows in tufts on the dead-wood wherever its roots can penetrate. Everywhere strange forms meet the eye, as if Nature in a frolic had run wild to form them. From the branches depend long trails of 'lianes,' ropes that twist and twine and squeeze the life out of the trees they fasten on. Orchids are here also, fleshy leaved, with no apparent roots; and black shapeless masses perched in the higher tree forks, the nests of the destructive white ant. Mosses clothe the ground with an emerald tapestry, beautiful to the eye, but treacherous and squelching full of water under foot. Everywhere is a rank garden of luxuriant dripping vegetation, which, speaking as to comfort, we could have done without.

After a stiff climb, the funnel narrows visibly, and we get into the central watercourse, where there is free space to breathe and less vegetation. The path is rough, macadamised by gigantic boulders, moss-grown and slippery, standing at incalculable angles, very tedious to clamber over, amongst which a sharp lookout has to be kept to preserve our poor dear shins. Gradually the trees, hitherto a green arcade overhead, thin away, and the watercourse emerges into a steep grassy slope, growing steeper at every step. Above, facing us, is the gap spoken of already; on the left is the mountain ridge; on the right rises old Pieter Both, cold, gray, and menacing—and a long way up. The ravine has narrowed to some fifteen yards; here and there is a scrubby bush. The water-course is now the only way possible to climb by, and in two places there are in it rocks twelve feet high standing straight up, which have to be clambered over somehow.

Above, on the right, is the 'Shoulder,' a narrow projection about twenty yards long, and two or three wide, on which breakfast is to be eaten and preparations made for the final climb. To reach this 'Shoulder' appears a sufficient task from where we are; beyond it rises a smooth perpendicular cone, without flaw or crack, mid air, apparently impossible. Yet as we bend back our heads and say so, out of one side far up, springs a small figure; and the word 'impossible' is wiped out of our dictionaries when we behold that a 'black man and a brother' has essayed the task. Up to the 'Shoulder' it is all hands and feet; beyond that there is nothing for it but rope. Viewed from a distance, the 'Shoulder' forms the knees of the sitting figure which the mountain is said to resemble. From many points the resemblance to the statue of Her Majesty at the London Royal Exchange is ludicrously exact.

When the top of the grass slope is reached, there is a narrow band of turf, dotted with half-a-dozen scrub bushes of a foot or little more high. This band leads off horizontally to the right, and is the only possible way to the 'Shoulder.' A very bad way indeed it is. From below it looks nothing but a strip of green ribbon stretched across the middle of a rocky face, black and green and slimy as ever earth, air, and water put together have concocted to puzzle mountaineers. In truth it is little better than it looks. There are toe-holes to stick your boots into as you walk with your face to the wall; and here and there a shrub to let you feel something between your fingers, besides a bunch of dead damp grass to save you from eternity. The whole passage is oozing with sludge and water, very slippery, and the grass looks utterly rotten and unreliable.

This track, which is about one hundred yards in length, lands you a little below the 'Shoulder;' then a dozen yards' stiff steep climb and you stand upon it—perhaps sit at first—for a yard farther on across it is space, sheer awful space, which to look down till you have got your breath is neither wise nor pleasant. You soon get used to the feeling; but it is a little startling just at first to find that this promised landing-place where breakfast is to be served ends in nothing, just three feet beyond the baskets that contain the provender. When you have got your breath, the first thing to look at is the great bare cone immediately above and the dangling rope up which your road must lie. Your eye takes it all in at a glance, and that first glance is not promising. But breakfast puts a better construction on the onward journey; and by the time we have made acquaintance with the Oxford sausages and Australian sheep's tongues, we begin to scramble about quite merrily, and doff boots, coats, and hats for the task with as jaunty a grace as did my Lord Russell on Tower Hill.

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The summit of Pieter Both is a cone of sugar-loaf form, compressed at the sides, that nearest the 'Shoulder' having a slight bulge, without which the ascent would be certainly impracticable. From the 'Shoulder,' which is covered with short grass and wind-scarred scrub, a ridge some three yards wide runs up to the foot of the 'Ladder Rock.' This ridge, which narrows as it goes up, is composed of rock-fractures firmly cemented together, and is to all appearance a great buttress supporting the cone. Up this you climb, hands and knees, without requiring a rope. The buttress comes to an abrupt end at the foot of a huge cube of rock, flat-sided and perpendicular, which stands bolt upright, and bars all further climbing without mechanical aid.

This is the 'Ladder Rock,' and is between fifty and sixty feet in absolute perpendicular height, its breadth being less than twenty feet. Running down its centre is a crack, without which the difficulty of climbing it would have been greatly aggravated, if not insurmountable. Against the face of the 'Ladder Rock' hangs a rope, the end disappearing over the upper edge where it has been made fast; the climb up it being made easier by a rough rope-ladder, which takes you up some dozen feet, to where the crack is sufficiently wide to admit your toes; that reached, grasping the rope with every one of your ten fingers, and squeezing as many of your toes into the crevice as you can, you must trust to your muscles and swing yourself up. The top of this rock reached, you are glad to sit or lie down upon a second ridge like the lower one, but much steeper and narrower; so narrow that in climbing up it, still with the rope tightly grasped, you sit astride it, your legs dangling over the sides, where it is better not to let your eyes follow unless the head that owns them is of the steadiest. This ridge has been christened 'The Saddle,' and is made up of broken rock cemented together with lava. Here and there are tufts of grass, with bosses of the

silver-leaved 'everlastings,' wind-torn and ragged, and other plants. The 'everlastings' shew brightly against the cold gray rocks, and tempt many of the party to pluck them to adorn their hats when they get them; which just now is somewhat doubtful, as the slightest slip may be fatal. This dreadful 'Saddle' is said to have once vanquished two aspirants; one of them, conscious that he had 'lost his head,' lay flat along the ridge, allowing the man who came to his rescue to climb over his body, a ticklish bit of mid-aërial gymnastics, which happily came off successfully.

The 'Saddle' rises at a steep angle, say the steep roof of a house, and ends at another 'facer;' a huge rounded rock perhaps ten feet high standing straight up across the way, the way now having narrowed to a blunt-knife edge. This is the 'Saddle Rock,' and is the nastiest-looking and most dangerous place in the ascent. The 'Saddle Rock' must either be swarmed up or circumvented by stretching round its left side; for both experiments a rope is needed, and both are a trifle delicate. This time the rope went round; and the thread which disappeared past the smooth slippery face, out over the ghastly precipice, that fell down sheer into Pamplemousses, was not inviting. To get round you have to sidle up to the base of the rock, holding the tightly stretched rope level with your head, and push on your feet inch by inch till your toes rest on the outermost knob of rock. You must be quite sure that their hold is good before you slip your hands round the corner, letting your head and shoulders follow until you can make out a little branch as thick as your umbrella, and four inches long, which sticks out of a cranny, and is within reach of a long straddle. The awkward part of this is that in looking for the branch you are obliged to look *down*. It is the first look-down absolutely necessary, and it is one not easily forgotten. To the writer it had a strange fascination. The actual peril of the position; the necessity of coolness in head and eye; the uncertainty how far this could be relied upon, was so startling, so vivid when the actual time came, as to force a feeling of absolute security upon the mind! Never did he feel more certain of his own powers than when hanging like a spread-eagle against the face of that rock twenty-six hundred feet above the plains.

It is a good stretch, but does not require very long legs to do it. One toe, no more, the right one on a knob of rock; the other foot feeling for those four inches of scrub wood; both hands overhead grasping the rope; and the strangest bird's-eye view between one's legs that featherless biped could wish for. It did not do to look too long. Another pull up is in front, along a ridge like the previous two, but narrower again, which runs up to the Neck, the rope your companion all the way; and then you can at last sit down in perfect safety. This is the 'Neck,' which the aneroid gave as three hundred and forty feet above the 'Shoulder.' It forms an irregular plateau partly round the 'Head,' some six or eight feet broad, and quite flat. On it is a carpet of rough grass and 'everlastings,' protected from the wind and rain by the overhanging mass of rock, which is the 'Head,' formed of irregularly shaped rock, forty feet in height, nearly round, and which contains what there is of the brains of Pieter Both.

A notch in one side allows the rope which has been already passed over, to rest without fear of slipping; and depending from this is a short rope-ladder, hanging quite clear of everything over the rim of the Neck. Its half-dozen rounds put the rope between your fingers; and in less time than it takes to write it you are on the old fellow's brain-pan, the keen air racing past, with no more harm done than a few 'barked' knuckles, and a queer growing feeling in one's head of utter loneliness. Nothing but space all round; blue sky; white scudding clouds quite close, which turn one giddy; for it seems to be that we on our little plateau are racing past the clouds, borne noiselessly, interminably; flung on some tiny planet whirling around an endless orbit. There was another feeling to confess to, suggested by that thin white rope creeping and disappearing over the bare edge—suppose it broke, or was cut or frayed through! It was our sole connecting link with home and life and dinner. How hungry we should be if anything were to happen to that rope! how thirsty! how cold in the chill night! how wet in the company of those drifting clouds! Insensibly one fell to calculating which was the fattest for to-morrow's meal.

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From our airy resting-place, the whole circumference of Mauritius, with a small exception, can be traced. From its height everything below is strangely dwarfed. Port-Louis as a town is barely visible; the harbour, which is nearly two miles in length, is a mere strip of water; moving objects are as much obliterated as if the land below was a printed map; sounds there are none, absolute silence, broken only by the whistle of the wind. In Mauritius, there is a paucity of animal life even in the valleys; it is possible to walk for miles without hearing a bird's note. On Pieter Both are no birds—even the lizards don't attempt him. Now and again a tropic bird, the *Paille en queue* of the French, sails past, screaming his news from the sea beyond. One by one our party gained the top, each one as he pulled himself over the edge lying down for breath. Our feet, innocent of shoe-leather, had lost some of their own, and more than one pair shewed signs of rough usage. But what were a few scars to the triumph of sitting perched on Pieter Both—the dear old Peter Botte of childhood's picture-book.

As the party met and got their breath, tongues were unloosed, and the serious concentrated look that had sat on most faces hitherto, melted under the influence of mutual congratulations. Eleven in all, without counting Deebee and an assistant Indian, were gathered on the 'Head;' sitting, standing, lying on that patch of black soil which Claude Penthé spoke of for the first time nearly ninety years ago. The sheet of lead for inscribing the names of the 'visitors' was there, but of a tin box which was known to have been left, not a trace remains; some passing hurricane has probably spirited it away. The descent was safely made, though it is perhaps more awkward than the going up. Some photographs were taken from the 'Shoulder,' on so narrow a shelf that it was necessary to place a man at each leg of the tripod to prevent the camera toppling over; a final glass drained to the health of the old gray rock; and about four o'clock in the afternoon, La Laura and the pleasant sugar-cane fields were reached without a single mishap.

It may be thought worthy to record the names of this the largest party that ever made the ascent of Pieter Both. He is not likely to be visited again for some time to come, and long before this account appears, the whole eleven will be scattered far and wide—miles distant from that strange, eerie trysting-place. They are: Lieutenants MacIlwaine, Creswell, Bayly, and Midshipman Elwes of H.M.S. *Undaunted*. Major Anderson, Captain Bond, Lieutenants Phillipps, Hammans, Sillery, and Saunders of H.M. 32d Regiment; and Captain Montague, Brigade Major. A pole was rigged up, and the Union-Jack hoisted and left flying, as a remembrance of the day, and as a sign to the many watchers in town that the ascent had been successful. These told us afterwards that through a telescope our movements had been perfectly traced; the passage of the 'Saddle Rock,' where the rope stretches round the face of the mountain opposite Port-Louis, having caused the strongest sensation, as our bodies, dwarfed to the size of spiders, came out against the sky.

W. E. M.

THE LAST OF THE HADDONS.

CHAPTER XXXIV.—TWO LETTERS.

AFTER arranging everything else, I sat down to write my farewell letters, commencing with one to Philip, and being very careful to allow no tears to fall upon the paper.

'DEAR PHILIP—I ought to have told you what I am about to write, when I bade you farewell this morning; but I wanted our parting to be, as it was, a happy one. Had I had the courage to tell you, instead of writing, I know you would not have yielded to me; perhaps you would not even have listened. When you read this, your blame cannot reach me; and until you can forgive me, we shall not meet again. Dear Philip, I cannot be your wife. I must bear all the blame of not making it known to you until now, as best I may; but I cannot marry you. The conviction has only become absolutely clear to me since you so much pressed me to make no longer delay.'

'Ah Philip, may you never suspect *how* it was made clear to me!' I mentally ejaculated, breaking down for a few moments in an agony of suffering. But I sternly called myself to order, and was presently bending to my task again.

'I have chosen a different life, and only delay explaining what that life is, and why it now seems more congenial to me than being a wife' (to the man who loves another woman, was in my thoughts), 'until you have quite forgiven me. Indeed, it is the belief that that time will come, which gives me the courage to act as I am doing. But there is one way, and only one, by which you can prove that your forgiveness is sincere, and give me the comfort of believing that I have not shadowed your life. If I hear that you are able, by-and-by, to find some other woman more appreciative than I'—

I dropped the pen, and bowed my face upon my hands again in the bitterness of grief. 'More appreciative than I!' But I forced myself to my task again, and left the words as they were. If he once suspected that it was a sacrifice, would he accept it, however willingly it were offered? Loved he not honour more? Besides, this must be a letter which he could shew to Lilian; at anyrate by-and-by, and no suspicion of the truth must reach her.

'If that time comes, and I earnestly desire that it may, I shall be able perhaps to justify myself to my own conscience. I know only one whom I should consider worthy of you, one not to be easily won, but worth the labour of a lifetime to win. I dare not name her—I am almost afraid to write of her. But, dear Philip, if it could be—if she whom I love above all other women could be in time won to make up to you for the loss of me, I shall have nothing to regret. I can only repeat that nothing but the knowledge of your happiness will give me the courage to hope for your forgiveness and to meet you again. Meantime, I can only beg you to try to believe in your loving sister

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MARY.'

I read the letter through with not a little dissatisfaction, though I could not see how to amend it. It had been so difficult to say sufficient to serve the purpose without giving some clue to the truth. I could not help a little bitter smile at the reflection how very different would his judgment of that letter have been if he loved me! How scornfully would such excuses have been swept away if I had been the woman he loved! How angrily he would have taunted me for being what in fact I should have been had I deliberately wronged him! Alas! I was writing to a man whose love for me was dead, and who yet desired to act honourably towards me. He would not be inclined to be unkindly critical about my *manner* of setting him free, if I could only contrive to make him believe that I wished to do so.

To Lilian I wrote in a somewhat more jaunty strain. Better that my letter should seem to be written even flightily than sadly. But I had been so little accustomed to this kind of diplomacy, that I was astonished as well as saddened to find how close one might keep to the truth in the

letter, whilst departing so far from it in the spirit. Neither to Philip nor to Lilian did I dare to tell the truth, and yet I could write all this without appearing to depart from it! Fortunately this kind of diplomacy blinds none who are not inclined to be blinded.

'MY DEAR SISTER—You must try not to be very angry with me for running away without bidding you farewell in some better fashion than this. But by acting as I am doing, I avoid your scoldings, or perhaps I had better say pleadings. It is really no use arguing with a person like me, as I think you have discovered before now. And as I have very deliberately made up my mind, there really is nothing to be done. You have, I know, been a great deal puzzled of late to account for the change which you have perceived in me, and as I could not explain it without shocking you, I have waited to get out of the way first. Dear Lilian, I was not in jest when I told you I had begun to suspect that marriage is not my vocation; and I have at length come to the conclusion to obey my instincts, which tend in another direction. I believe that you will in time agree with me in thinking that I have done for the best; though I fear you will be very angry with me at first, not being able to see all my motives. Please get dear Mrs Tipper to ask Philip to come down sometimes, and try what you both can do to cheer and comfort him. He knows so few people, and he will be so terribly lonely. I must trust that in time he will come to acknowledge that I may not be altogether so selfish and inconsiderate as I must appear to be to him and to all of you in the first moments of disappointment. I will say this much to you, dear sister—I feel, and the feeling is not altogether of sudden growth, that I am too old for Philip; or perhaps I ought rather to say he is too young for me. At anyrate I have chosen a different life, and only wait until I feel sure that you have all forgiven me, to prove to you that I am happy in it. Say all that is kind to dear Mrs Tipper for me. I must hope to be able to prove my gratitude to her by-and-by. Ah Lilian, my sister, if I dared to write about my hopes! I can only say that if Philip is in time fortunate enough to find some good woman willing to make up for the past to him, my gratitude towards her will be very great. I am going away because I think it is best for us all that I should go, and because the persuasions which your love might prompt you to use would not induce me to alter my decision. I have begged Philip to try to believe in a sister's love, and I ask you too, dear Lilian, to believe in the love of your sister

MARY.'

Little as I was satisfied with these two letters, I knew that I should not be able to improve upon them, however much I might try to do so. The fault was that I could not be explicit; and that would be apparent to myself if not to the others, however elegantly my sentences might be turned.

I put the letters aside until they should be required, and then lay down for a few hours' rest. Thank God it *was* rest! I fell into a deep dreamless sleep, and only awoke when Becky came to call me in the morning. There was still the same expression in her face, half sorrow, half pity, as though she saw cause for both as she looked at me.

'Now, Becky, you must not look at me in that way, to begin with. I am going to depend a great deal upon you, and it will not do to let your face tell all you are thinking about, as it is doing now.'

'I can't help it shewing, because— O Miss Haddon, dear, I know you are not so happy as you pretend to be—I know it! And it's ever so much worse to see you look like that, than as if you were crying and sobbing!'

I saw that it was no use trying to throw dust into Becky's eyes.

'Well, suppose I am not very happy, Becky, and suppose I have some good reason for pretending, as you call it, to be so. Suppose that I do not wish to grieve your dear old mistress and Miss Lilian by allowing them to see that I am unhappy. It is of great importance that I should appear cheerful to-day; and I want you to help me as much as possible to make them think that I am, for—Becky, I am going away, and they must not know I am going.'

Becky threw up her hands. 'Going away!'

'Hush! No one but you must know that I am going.'

She was on the carpet clinging to my feet. 'Take me with you; do, pray, take me, Miss Haddon, dear; no one will ever love you better, and I can't stay without you!'

I made her get up; and taking her two hands in mine, murmured in a broken voice: 'Try to trust me, Becky. If I could take you with me, it would be very selfish of me to do so. It is your duty to stay here, as it is my duty to go. But I shall not be so far away as I wish them to believe I am—recollect, as I *wish* them to believe; and I may be able to see you frequently, if I find that I can trust you to keep my secret.'

'You may trust me, Miss.'

'I am sure I can, or I would not ask you to help me. I must not break down this last day, Becky; for the sake of others as well as myself, I *must* not.' {470}

She dried her eyes; and presently the expression I wanted came into her face.

'Please forgive me; I won't shew it any more; and I will do anything you tell me.'

'First, and above all, you must earnestly do what you can to assist me to make it appear that I am

feeling neither sorrow nor anger to-day, Becky.'

'I will,' she replied, simply and honestly.

'And next, I want you to contrive to carry that small portmanteau into the wood for me at dusk this evening, when some one will meet you, and bring it to me. You must contrive it so that no one will know that you have helped me. The best time for you to take it will be whilst the ladies are at tea. If you take in tea at the usual time, precisely at seven, you would have a spare half hour, which would be time enough. Slip out the back way, and carry it anyway. I cannot take it myself, as there must be no good-bye.'

'Very well, Miss. This one?'

'Yes. It is not too heavy for you, I hope?'

'O no, Miss; it is not that;' lugubriously.

'Now, Becky, please do not forget. *That* is not looking cheerful, you know.'

'No, Miss Haddon, dear; I won't forget, when I'm down-stairs.'

Fortunately, she helped me to get up a smile, to begin with, at the breakfast-table. How shall I describe the expression of Becky's face when she came in with the coffee, &c. Her mouth was distended with a grin, which was in strange contrast with the sadness in her eyes, and her whole face reminding one, as Lilian said, of an india-rubber one pulled out of shape!

Whenever she entered the room there was the same grin on her face. In fact, in her anxiety to be loyal to me, she was overacting her part, and it culminated, when, after looking at her in some astonishment, Lilian inquired if she had received any good news.

'Yes—no. It's only because I'm so happy to-day, Miss,' returned Becky, with a still more alarming distension of her mouth.

I think Mrs Tipper had occasion afterwards to congratulate herself upon Becky's 'happy days' not coming very frequently.

'She has broken two plates and a cup already, my dears,' anxiously said the little lady to Lilian and me. 'And I can't find in my heart to be angry with her about it, when she says it's through being so happy; but really, you know, it is a most unfortunate way of shewing her happiness.'

Lilian and I made a merry little jest at it, advising her to look sharply after such household treasures as Windsor Castle, &c.

'I wouldn't let her dust them to-day for the world, my dears!' ejaculated the little lady, hastily trotting off to the kitchen again.

I did not allow Lilian to make her escape afterwards. I smilingly decided that there was to be no French history to-day, and that she and I were to spend the morning together in the old delightful fashion of the past. Philip was not coming for a day or two; and we would go over some of the old work, which had been somewhat neglected of late, with the exception of music and singing. A little steady work, and the consultations over it, was bracing for us both, and set us at our ease as personal talk would certainly not have done. We were not, either of us, strong enough just then to talk about ourselves. Moreover, I begged Mrs Tipper to make it a fête-day, and treat us to one of her famous lemon puddings; and she was enjoying herself to her heart's content in the kitchen, only too delighted to be asked to treat us, and bent upon shewing that a lemon pudding was not enough to constitute a feast in her estimation. The only disturbing influence was poor Becky's hilarity.

'My dears, it really is not natural,' the little lady confided to us at dinner. 'No more like smiling than a baby in convulsions. I was almost frightened at the strange faces she made just now in the kitchen; and if it goes on, I must make her take some medicine.'

I begged Becky off that infliction, persuading her anxious mistress to wait a few hours.

Kind Becky! she would very soon be able to look as she felt. There would be nothing unnatural in her regret at my departure, after having known me so long a time. On the whole, I was more successful than I had dared to hope for in the way of leaving a pleasant impression upon the minds of Mrs Tipper and Lilian—just the impression I wished to give them.

They believed that I was happier than I had been for some time previously, and I know now that they attributed my happiness to the fact of the date being at length fixed for my wedding to take place. They had seen just enough to perceive that some disturbing influence was at work with me; and the sudden change in my bearing seemed to them to imply that my doubts and fears were now set at rest. It did me real good to witness the unfeigned relief in Lilian's face; the unselfishness which could rejoice in my happiness though her own might be wrecked. I know now how much she had suffered from shame and dread—how terribly afraid she had been lest I should divine any part of the truth; lamenting over what she considered to be her disloyalty to me, and blaming herself as she certainly did not deserve to be blamed.

'Dear Mary, it seems quite like old times again; does it not?' she said, looking up into my face with the nearest approach to happiness in her own which I had seen there for some time, as I bent over her with a playful criticism upon a bit of foliage she was doing.

'It has been a pleasant day, has it not, dearie?' I returned. 'All the pleasanter for French history being kept out of the programme, I think. You know I never did take kindly to that.'

She flushed up, nestling closer to my side. 'There shall be no more of it, Mary,' she whispered.

I replied with a tender kiss; then lightly said: 'I really feel quite kissably inclined this afternoon!' turning to my dear old friend, and giving her two or three hearty good-bye kisses, then back again to Lilian with a last hug.

'And now, I must run off again;' adding as I reached the door: 'Do not wait tea for me. I shall not be able to get back by then.'

'To town! Mary?' asked Lilian. 'And I am not to be permitted to accompany you again. I feel sure there must be something very mysterious going on!'

But she was smiling, and I believe that both she and her aunt were now quite at ease about it, having made up their minds that their first surmise—that I was preparing some pretty surprise for them—was a correct one. {471}

I ran up to my room, hastily indicated to Becky where she was to find the two letters in a couple of hours' time, put on my bonnet and cloak, gave a quiet embrace and warning look to the faithful girl, sobbing under her breath, then went down-stairs again. I dared not venture to go into the little parlour for a last word, lest some tender speech of Lilian's should cause me to break down; so little would do it just now, when every nerve was stretched to its utmost tension.

I passed swiftly out, and down the garden path, only venturing to give one look back to nod and kiss my hand, when I reached the gate, and then sped on as fast as my feet would carry me. I was just turning into the lane which led towards the stile, when suddenly I found myself face to face with Robert Wentworth.

'Where are you going to at that rate, Mary?'

I shrank back, for a moment incapable of uttering a word; eyeing him desperately, almost defiantly, for I felt in my misery as though he had suddenly presented himself in my path to bar my escape—a new power to strive against, when my strength was almost spent. He could always see deeper than any one else; and he had come upon me when I was so unprepared. I had just dropped the smiling mask which I had found it so difficult to wear all day, and was beginning to feel sufficiently secure from observation to be less careful as to what my face might tell. I caught in my breath, shrinking farther away, but facing him like an animal at bay. For a few moments he stood gazing at me, apparently as much at a loss for words as I was myself, then his eyes fell upon my muffled hand, and he asked: 'Have you hurt your hand, Mary?'

'Yes.'

'Not seriously, I hope? How did it happen?'

I looked down at my hand in a dazed kind of way, trying to recollect what had happened to it. 'I don't know. Good-bye.'

'Mary! is there anything to be done which a brother might do for you?' he asked in a low troubled voice.

I tried to think what brothers could do, and what there was to be done for me, then shook my head.

'For old friendship's sake, *do* treat me as a brother now, Mary!'

His very evident perturbation had the good effect of making me rally my scattered wits, and I was so far like myself again as to reply: 'The only—only way in which you can help me just now is to let me go without any further questioning.'

He stood aside at once without a word, and I passed on. But I had no sooner done so than my conscience smote me. Was *this* the way to part from him—the one above all others so true to me? I turned back to where he remained standing, laid my hand for a moment upon his arm, and said: 'Please forgive my rudeness, Robert; and believe that if there were anything for a brother to do, I would ask you to do it. And perhaps you *will* be able to help me presently in trying to convince them that, however blamable I may at first appear, I have acted, as I believe, for the best;' thinking that they might possibly turn to him for advice and assistance. Then offering my hand, I added tremulously: 'Good-bye, Robert.'

'God keep you, Mary!'

(To be concluded next month.)

CURIOSITIES OF THE VOICE.

SOME years ago, a delightfully interesting book was written by Sir Charles Bell on the human Hand. There might be fully as interesting a work written on the mechanism of the human voice, in which would be equally demonstrated the power, wisdom, and goodness of the Creator. We offer a few observations on the subject. Until recently, there were mysteries difficult to explain concerning the wonderful inflections in the voice. Now, it is thoroughly understood how words are produced, and how the throat is able to send forth a wide variety of charming notes in singing. We begin by mentioning that Dr Mandl has devoted himself to the study of the organs of speech, and from his work on the *Larynx* we give some interesting particulars. Investigators have long been occupied with researches; but until they had seen the larynx of a living being one thing only was proved, that the voice was formed in the glottis. For fifty years of this century they were

trying by mirrors and other appliances to examine the interior of this organ, but without results. Suddenly an inspiration came into the head of a celebrated singer, whose name awakens charming remembrances among old amateurs. This was M. Manuel Garcia. Ignorant of all the trouble which surgeons had taken in order to observe the movements of the throat in the act of singing, he conceived the idea of looking at himself. By the help of two mirrors, the one reflecting the image on to the other, he saw the whole of his larynx depicted. In ecstasy before the glass, he determined to pursue the accidental discovery which had been so long dreamed of. But the autumn had set in, and the sun's rays, which were necessary to success, did not lend their aid. London with its fogs forced him to try artificial light, the results of which were unsuccessful, and therefore he could only profit by fine days; yet he soon recognised how isolated sounds were produced. In 1855 the Royal Society received some communications from him on these curious studies.

The subject was at once taken up with great activity, especially in Vienna, where success was far from equalling the hopes of the doctors. The caprices of solar light and the defects of artificial threw them into a state of despair. By all means they must improve their mirrors. Czermak, the Professor of Physiology at Pesth, taking an example from the instrument used in examining the eye, the ophthalmoscope, had recourse to a concave mirror which concentrated the light. From this time there was no difficulty but to perfect the lenses. Czermak having acquired great skill in the use of his laryngoscope, visited the principal cities of Germany, where his demonstrations deeply interested surgeons and physiologists. He was warmly received in Paris in 1860, where he shewed not only the whole length of his larynx, but also the interior of the trachea or windpipe as far as its bifurcation; a spectacle truly astonishing to those who witness it for the first time. It is not possible to examine the organ of the voice with the same facility in all; a man must have had some experience before he can do it. {472}

A slight sketch of this organ will perhaps make the subject clearer. From the breast there rises to the middle of the neck the passage for the air between the lungs and the mouth; at one end it is divided into numerous branches, called the bronchial tubes; at the upper end, like the capital of a column, is seen the larynx, resembling an angular box; strong cartilages make it very resistant; and the interior is lined with a mucous membrane forming folds, named the vocal lips. These separate, lengthen, or shorten in the formation of various sounds. The largest of the four cartilages rises in an annular form, and protects the whole structure. It is but slightly shewn in the neck of the female, but strongly marked in the man, and is popularly called Adam's-apple. Like everything else, the larynx presents individual differences. A fine development is an indication of a powerful voice. As the child grows up, there is a sudden alteration and increase of size; but it always remains smaller in the woman than in the man; the angles are less sharp, the muscles weaker, the cartilages thinner and more supple, which accounts for the sharp treble notes in their voices.

Singing demands a different kind of activity in the organs from speaking. In society, where education requires a submission to rule, singing belongs to the domain of art; but in a primitive state all nations have their songs. Musical rhythm drives away weariness, lessens fatigue, detaches the mind from the painful realities of life, and braces up the courage to meet danger. Soldiers march to their war-songs; the labourer rests, listening to a joyous carol. In the solitary chamber, the needlewoman accompanies her work with some love-ditty; and in divine worship the heart is raised above earthly things by the solemn chant.

A strong physical constitution and a perfect regularity in the functions of the organs used in singing, are inappreciable advantages. They should be capable of rendering an inspiration short and easy, the expiration slow and prolonged; there is a struggle between retaining and releasing the air, and with the well-endowed artiste the larynx preserves its position, notwithstanding the great variety of sounds which it emits. But the evolutions of the parts are multiplied, the vocal lips vibrate, and the configuration of the cavity modifies the sounds which are formed in the glottis, and determine the tone of the voice. The most energetic efforts of the will cannot change this tone in any sensible manner. Professors injure their pupils by prescribing the position of the mouth, from which perhaps they themselves derive an advantage.

It is interesting to watch the play of the organs by the help of the laryngoscope, and see the changes which succeed one another in the low and high notes. At the moment when the sound issues, the glottis is exactly closed; then the orifice becomes a very long figure, pointed at the two extremities. As the sound rises, the vocal lips approach each other, and seem to divide the orifice into two parts; then as the highest notes are sounded, there is but a slit the width of a line. The vocal lips change like the glottis; they stretch out, harden, thicken, and vibrate more and more as the voice rises. Women, who have a smaller larynx and shorter vocal lips, can sing higher notes than men, with a tone less powerful, but sweeter, more uniform, and melodious.

The ordinary limits of the voice comprehend about two octaves of the musical scale: it can easily be increased to two and a half; but some reach the very exceptional range of three, and three and a half. Thus at the commencement of this century, Catalani astonished every one who heard her, as a sort of prodigy. Suppleness and intensity may be acquired by practice, as has been proved in the case of many singers: the voice of Marie Garcia was harsh, but it became at last the delicious one of Madame Malibran. In general, the natural gift is manifested without culture; the child endowed with this great charm warbles like a bird for amusement; a lover of art passes by, listens with surprise, and promises glory and fortune to the rival of the lark. Thus the famous Rubini won his triumphs. Occasionally the singer has in a moment lost all power, and an enchanting voice will disappear never to return; such a misfortune befell Cornelia Falcon.

Those who have watched the formation of vowels and consonants can describe very precisely the

positions which the lips, tongue, and palate take in articulation. Yet almost identical sounds can be produced with different positions. As we all know, the teeth are a great help to pronunciation, but a person who has lost all his teeth can modify the play of the lips and tongue and express himself intelligibly. Actors imitate the voice of public characters so as to make the illusion complete. The ventriloquist can make his voice issue as if from a cavern. When misfortune has deprived a man of the whole or part of his tongue, he can still hold a conversation, though the sounds are never particularly agreeable. All this shews that there is nothing absolute in the actions which form words, though in general the same organs play similar parts. Those who were born deaf have ceased to be dumb by interpreting the movements of the mouth with wonderful certainty: they guess the words of the speaker instead of hearing them, and so learn to speak by imitation, their speaking, however, being seldom well modulated. There are now several institutions where the poor creatures who have been deprived of one of their senses can acquire a means of communicating with their companions without the tedious intervention of writing. The master indicates to the child how he must open his mouth, place his tongue and lips; he then draws the pupil's hand over his own larynx, so that he may feel the movement. Those who, like the writer, have seen this reading from the lips, will be struck with the surprising delicacy of the impressions made on the eye which has been thus cultivated.

In comparison with the human voice, that of animals seems poor indeed. The barking of the dog, the mewling of the cat, the bleating of sheep, cannot be called language, in the proper sense. Yet the larynx of these creatures is on the same plan as that of man. Among monkeys the resemblance is perfect. To all appearance the impossibility of speaking is due to the formation of the lips and tongue. In 1715 Leibnitz announced to the French Academy that he had met with a common peasant's dog that could repeat thirty words after its master. In spite of such an authority, we must always say when we most admire the intelligence of this faithful companion: 'He only wants words.' So well endowed with memory, affection, and intelligence, he can only express his joy by sharp, short expirations of air through the glottis. Howling is a prolonged note in the pharynx, excited by deep grief or pain. Yet they in common with many other animals can communicate with each other in a marvellous manner when they wish to organise an expedition. A dead bullock was lying in a waste far from all habitations, when a solitary dog, attracted by the smell, came and fed upon it; immediately he returned to the village and called together his acquaintances. In less than an hour the bones were picked clean by the troop.

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Opportunities for studying the language of wild animals are rare: they fly from man, and when in captivity they become nearly silent, only uttering a few cries or murmurs. Travellers have sometimes been able to watch the graceful movements of the smaller African apes. Living in the branches of trees, they descend with great prudence. An old male, who is the chief, climbs to the top and looks all around; if satisfied, he utters guttural sounds to tranquillise his band; but if he perceive danger, there is a special cry, an advertisement which does not deceive, and immediately they all disperse. On one occasion a naturalist watched a solitary monkey as he discovered an orange-tree laden with fruit. Without returning, he uttered short cries; his companions understood the signal, and in a moment they were collected under the tree, only too happy to share its beautiful fruit. Some kinds possess a curious appendage, a sort of aerial pouch, which opens into the interior of the larynx and makes a tremendous sound. These howling apes, also called Stentors, inhabit the deepest forests of the New World; and their cries, according to Humboldt, may be heard at the distance of one or two miles.

If it be ever possible to observe the play of the larynx of animals during the emission of sounds, the subject will be a very curious one. The difficulty seems almost insurmountable, as their goodwill must be enlisted; yet M. Mandl, full of confidence in his use of the laryngoscope, does not despair. After man, among animated nature, the birds occupy the highest rank in nature's concerts; they make the woods, the gardens, and the fields resound with their merry warbles. Cuvier discovered the exact place from which their note issues. They possess a double larynx, the one creating the sounds, the other resounding them: naturalists call the apparatus a drum. Thus two lips form the vocal cords, which are stretched or relaxed by a very complicated action of the muscles. This accounts for the immense variety of sounds among birds, replying to the diversity in the structure of the larynx.

The greater number of small birds have cries of joy or fear, appeals for help, cries of war. All these explosions of voice borrow the sounds of vowels and consonants, and shew how easy and natural is articulation among them. Those species which are distinguished as song-birds have a very complicated vocal apparatus. For the quality of tone, power, brilliancy, and sweetness, the nightingale stands unrivalled; yet it does not acquire this talent without long practice, the young ones being generally mediocre. The parrots which live in large numbers under the brightest suns, have a love for chattering which captivity does not lessen. Attentive to every voice and noise, they imitate them with extraordinary facility; and the phenomenon of their articulating words is still unexplained. It is supposed that there is a peculiar activity in the upper larynx. As a rule, they attach no meaning to what they say; but there are exceptions. When very intelligent and well instructed, these birds—such as Mr Truefitt's late parrot, an account of which appeared in this *Journal* in 1874—can give a suitable answer to certain questions.

Our notes on this interesting study come to a close. Man is well served by his voice; words are the necessity of every-day life; singing is its pleasure and recreation, whether the performers are human beings or birds.

FOX-HUNTING ON THE MOUNTAINS OF SCOTLAND.

THE light of an almost full moon was struggling with the first faint glimmer of dawn one morning late in February as I sprang out of bed and looked through my window. I could see a few fleecy clouds racing across that luminary; and away in the north-east lay a dark bank, speaking of the direction taken by the storm which I had heard at intervals during the night; but otherwise the sky was clear and gave promise of at least a few hours' respite from the almost ceaseless rain of the previous two months. Such being the case, I lost no time in dressing and in calling my companion; and before another day had fairly begun, we were passing through the fresh clear air on our way to the hill, accompanied by two couple of fox-hounds, while an irrepressible terrier who would not be denied found its way to its owner's heels before we had gone many hundred yards.

Foxes in the Highlands are held in very different estimation from the same animal farther south. Death, meted out with all weapons and under all circumstances, is their lot whenever found; and few acts are considered more meritorious or more deserving of public thanks than the destruction of a vixen and her cubs. Little fault can be found with such a state of affairs when it is remembered that hunting is impossible, and that otherwise foxes would increase to such an extent as not only to do great damage to game, but to become a serious tax upon the sheep-farmer, especially during the spring, when quantities of lambs fall victims even under present circumstances. The great extent of many Highland properties and the small number of keepers employed, render it impossible for them to keep the foxes under without assistance; and the result has been the installation of a regular district fox-hunter, whose one employment is to go about from farm to farm accompanied by his hounds and terriers, and kill foxes, on consideration of receiving a toll of so much per score of sheep, as well as free quarters for as long as he chooses to stay.

Such was my companion on this occasion. He deserves, however, a more than general notice. To watch him as he sat over-night by the kitchen-fire, his chin almost resting on his knees, no one would guess, from his bent and stiffened appearance and long white hair, that they were looking at the best hill-man within a radius of fifty miles; a man who on three different occasions had ventured alone on the outlying heights during the worst of a wild snow-storm in search of missing shepherds, and who had succeeded in bringing two of them home alive, despite having to carry one for nearly five miles through drifts out of which no other man in the glen would have had a chance of extricating himself. Although now near sixty years of age, time did not seem to have had any effect upon his physical powers; and while he grumbled and declared himself worn out and unfit for his position, entailing as it did an immense amount of fatigue and hardship, it was well known that the man who could live alongside of old Ian Cameron when once his hounds had settled down to a fox, must not only be of sound wind and limb, but more active than nine-tenths of the young Highlanders in the district.

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The hounds also deserve some notice before I enter upon the doings of the day. They were small, very powerfully built animals, with heads and frames much resembling the old Southern hound; and possessing a grand bell-like note; but far too slow to come up to the modern idea of a fox-hound. Indeed, except on some very rare occasions, when a fox had been caught unawares or, as it is usually termed, 'chopped,' neither they nor their immediate ancestors had ever killed one without assistance. Ian had, he told me, first got the strain from the late Lord Eglinton nearly fifty years ago, and had kept it pure from that day to this. It was, however, in terriers that the old man excelled. Talk of the prize-winners of the so-called Skye breed at the dog-shows of the present day! I very much doubt if Ian would have accepted one of them as a gift, while his specimens would no doubt have been contemptuously ignored by any well-regulated judging mind. Long-bodied, short-legged, powerful little animals they were, with rough coarse coats of the thickest of thick hair, each of them able and willing to bolt or half kill a fox single-handed. Their ancestors had originally been brought from the island of Barra, where, in common with all the western islands, the breed supposed to be confined to Skye is found of the utmost purity; and they were as perfect representatives of their class as it would be possible to find anywhere.

Their owner had arrived two days previously at the house of a large sheep-farmer with whom I was staying; and as I knew there were several foxes frequenting the cairns among the high hills, I had arranged to accompany him on this and on subsequent occasions; and I may add, that for those who both can and will run for miles over the wild tops of our Highland hills, and who care for hunting and seeing hounds working when separated from the excitement of hard riding, there are tamer amusements than accompanying a professional fox-hunter on his rounds. On this occasion we had some miles to go before there was much chance of falling in with the object of our search. The wily tods rarely came down to the low ground, where the house and arable portion of the farm were situated, preferring to keep among the almost inaccessible boulders and rocks which strew the surface of many acres on the hill-tops, from whence during the breeding season they made nightly raids against the lambs for miles around. In winter, however, the snow drove them down somewhat, and they took up their quarters in such low-lying cairns as contained rabbits, which, with an occasional white hare, seem to form their principal food, until the advent of spring brings them more easily captured and more toothsome victims. They by no means, however, confined themselves to any one spot, but moved about from cairn to cairn; and it was in the hope of getting on the line of some such prowler and marking him to ground that we were making our present expedition. A finer morning for hunting of any kind it would have been impossible to conceive: a warm south-westerly breeze was blowing, and the air felt more like May than February, while the few remaining clouds were rapidly disappearing, and the newly-risen

sun, as yet concealed from us by the intervening mountains, was sparkling on the snow-covered summits of the hills, or pouring down through the glens in long rays of golden light on to the many lochs and woods which, intermingled with cultivated fields, formed a belt of lowlands at our feet stretching to the Western Ocean.

For nearly two hours we pursued our way, mounting higher and higher, until we reached a broad glen, shut in by very high hills, on which were some cairns much affected by the foxes. During this time the old fox-hunter had kept up a continuous stream of talk, quite regardless of the severity of the ascent, which was such in places as to render me glad of the excuse afforded by the glorious view below, for a momentary rest. His theme was foxes, and it may be imagined that after an experience of nearly fifty years he had a good deal to say worth listening to on the subject. One anecdote of a cub I remember. He had been asked by some southern laird to preserve any cubs he could catch, and to send them south to him for turning out; and one spring he succeeded in getting three. They were too young at the time of capture to bear the long journey; but after two months he put the three into a wooden box, nailed it down, and took it in a cart to the pier, some twelve miles distant, where the steamer by which he was going to send them called. A gentleman he met there told him that unless he wished the cubs to die of suffocation he had better take the top of the box off and bore breathing-holes in it; and while doing so one of them made its escape. It was dark at the time; and after a short pursuit he had to give it up as hopeless, and returned home next morning after sending off the remaining two. To his astonishment he found the missing cub comfortably ensconced in its accustomed corner, and was told by his wife that at eleven the previous evening, just three hours after the little animal had made its escape, she had heard something scratching at the door, and on opening it found the cub, much travel-stained and wet, and evidently very tired, but delighted at reaching home again. How it managed to find its way on a dark wet night over a road it had never seen, and had only once traversed shut up in a box at the bottom of a cart, is one of the mysteries of instinct; a faculty which ought rather to be ranked with reason.

On entering the glen Ian commenced to cast his hounds, which had hitherto kept to heel, from side to side; and we had hardly gone a hundred yards before they began to get busy, and in a few minutes it was evident they had got on the line of a fox. Knowing the ground well, we watched them without moving for a little while, until indeed we felt no doubt as to the particular cairn their quarry had been making for, and then, as his line had by no means been a direct one, we had ample time to get above the hounds and, while making our own way as direct as possible, watch them as they followed him along the mountain-side. It was pleasant to see them all working together, making a cast here or a turn there, as they puzzled out the cold scent, their rich full note every now and again reaching us as one or other of them was able to 'speak' to it. Winding in and out among the small corries, but ever rising higher and higher, the tiny pack at last headed direct for the cairn, close to which we had arrived several minutes before; and whether the scent was fresher, or they were encouraged by again seeing us, every hound joined in the musical chorus. {475}

We were standing on a small eminence close by, and as the rich bell-like notes sounded through the clear air of the mountain-tops, an old dog-fox with a white-tipped brush stole out, and before Ian could get his gun up, was well under weigh. I am glad to say that shooting straight did not form one of the old man's accomplishments, and I saw his slugs flatten themselves into great white blotches on the face of a big black rock a couple of yards behind the tod. At the same instant, with a yell which brought the hounds to my heels, I rushed after it, and only waiting long enough to see them racing away in full view, I made for the top of the hill, now not many yards distant. Ian, notwithstanding old age and white hairs, was already before me, and I had to run hard before I could get on level terms with him. The chase was for the time out of sight though not out of hearing; but after a smart run of half an hour's duration we came to a jutting perpendicular precipice, forming the angle where a smaller glen joined the main one, and far below us we could see the hounds racing without a check, while a careful search of the probable line of the tod revealed him making the best of his way to a very strong cairn on the hill exactly opposite to us. Feeling pretty certain that as he had got his mark in that direction, he would make it his point, we sat down on the brink of the precipice and watched both pursuers and pursued. The latter was evidently gaining ground, and seemed to be aware of the fact, as he was certainly not distressing himself; but the hounds were running so that literally a sheet would have covered them, and were hunting his line without even a momentary divergence; so that, however well this strong hill-fox might have proved, he would have found it no easy matter to run them out of scent. Five minutes across the glen, and another five up the opposite hill, sufficed, however, to bring him close to his stronghold; and secure in the prospect of immediate safety, he had the coolness to turn round and watch his pursuers as they toiled up behind him; disappearing from our view the moment after behind the great rock and boulders which everywhere lay scattered around.

As soon as he did so, we got up and made the best of our way across, finding the hounds mounting guard on the rock under which he had disappeared. The cairn he had taken refuge in was the strongest and largest on the property. A chaotic mass of loose boulders were strewed one above another among enormous masses of rock over an extent of some four acres; and so rough was the walking that it was exceedingly difficult if not absolutely dangerous to attempt to cross it. Rabbits inhabited it by the thousand, and the whole mass was connected more or less by passages beneath the surface. Indeed there was nothing to prevent a fox from taking the ground on one side and bolting perhaps two hundred yards off on the other; and Ian's first care on arriving was to take his hounds round outside, to make sure that it had not done so. Satisfied on this point, he chose a position on one of the biggest rocks, and after putting his terrier in he

retired there, in readiness to fire if the fox bolted. I remained down below, to follow as far as practicable the progress of the terrier. The little animal well knew its work, and plunged in under the rock with the utmost keenness. A second after, a yelp or two told that it could feel the hot scent, if it had not reached the fox; but the yelps grew fainter and fainter, and at last died away. I kept moving about among the boulders, listening at the rabbit-burrows and crevices of the rocks, and at last I distinguished the snarl of the terrier, followed at intervals by distant sounds of tearing and scratching. The combat, however, if combat it was, was taking place very deep down, and it was impossible to distinguish what was going on. By degrees also, even these sounds ceased; and as, after waiting for more than half an hour, they were not renewed, Ian joined me, and ineffectually called and whistled for his dog.

After persevering in trying to make out its position for some time, we at length desisted; and as it was necessary for one of us to go for assistance in the shape of other terriers and more men, I volunteered to undertake the task, leaving Ian to guard the cairn during my absence. A sharp run of an hour took me to the farmhouse, where the news of our having got a fox in the Gray Rock Cairn soon spread; and by the time I had bolted a few mouthfuls of breakfast, and got some grub put up for Ian, I found half-a-dozen men and three times that number of terriers and collies in readiness to accompany me back. A little over two hours saw us at the scene of action; and we heard that nothing had occurred during my absence, except that Ian felt pretty confident that he had once distinguished the sound of his terrier scraping. We had brought four others of his up with us, and these he at once turned in; while every one who owned a dog of the breed put it into some part of the cairn, and then awaited the result; the collies meanwhile contemplating the proceedings, sitting on their haunches with their ears half cocked and their heads a little on one side; pictures of canine wisdom. The terriers had not been in many minutes before a regular chorus of yelping commenced, followed by the appearance of one or two of the less courageous with their tails well tucked in between their legs, only to receive execrations in guttural Gaelic from their owners. We now set to work to move some of the smaller boulders; and at the end of about an hour's hard work, we reached the scene of the conflict, and found the fox which we had marked to ground, and another, quite dead.

Great were the rejoicings over the death of these two of the shepherds' enemies, and loud the praises each man bestowed on his own terrier, if he was fortunate enough to possess one. In real truth, however, it was those belonging to Ian which had done the work, as they were put in first, and not more than three could have reached the fox at one time. {476}

On several other occasions I was out on such-like expeditions from dawn to an hour or two after dark, during which time we killed six foxes, one falling a victim to Ian's gun, and the rest meeting their death in fair fight with one or two terriers; as except on the occasion I have just related, I do not remember more than the latter number being turned in at once. We also had some capital runs with the hounds; and whatever may be the opinion of the legitimate fox-hunter, I can assure him he may have worse sport than a day on foot among our Highland hills.

W. H. D.

SMUGGLING IN ITS DROLL ASPECTS.

THE Custom-house, London, although it figures in almanacs in the list of 'places of public amusement,' is by no means a cheerful building. Situated in the extremely busy and dirty thoroughfare called Lower Thames Street, next door to Billingsgate Market, far-famed for good fish and choice language, it has few attractions for those who are not compelled by business needs to enter its portal. Here is nothing but noisy activity. Merchants' clerks, porters, car-men, and the numberless beings who form the rank and file of a vast commercial centre, elbow each other as they push through the ever swinging doors in their anxiety to get their business transacted.

Occasionally a knot of country people may be met with in the 'Long-room' staring about them in the fruitless search after anything in the shape of entertainment; but with these exceptions the place is given up to business. If these visitors were able to find their way to the Museum, they would there see much to both interest and astonish them; but this part of the building is perhaps necessarily withheld from the general public, for there seems in the busy hive so much for everybody to do, that drones in the shape of sight-seers would hardly be welcome.

Yet, the Custom-house contains a museum of real curiosities—memorials of attempts at smuggling. Various causes have contributed to the decline of contrabandism as a means of livelihood, chief among which are the necessary reductions and alterations in the Customs tariff since the adoption in this country of free-trade principles. When such valuable and portable articles as watches and lace were heavily taxed, the temptation to secrete them was naturally very common. At the same period too the duty on spirits was about five times as much as its intrinsic worth, and therefore this class of goods afforded a rich harvest to the successful smuggler. Things are changed now, for lace and watches are duty free, and the tax upon spirits has been reduced considerably more than one half. Tobacco and spirits, owing perhaps to the universal demand for them, have always, above other things, met with the smuggler's particular regard; and such cases as now come before our police magistrates are generally confined to these two articles. A matter-of-fact heavy fine and confiscation of the surreptitious goods, is the usual result of conviction; and the smuggler—which our childhood's fancy painted as a brave

hero fighting the myrmidons of an oppressive government in some wild cave on the sea-shore—is quietly walked off to prison until he can pay the forfeit. 'The Smuggler's Cave' still remains; for with that clinging fondness for the traditions of past times, it is the fashion to dignify any natural crevice in our cliffs with that title; but now the modern policeman steps upon the scene, and poetical ideas vanish with the sound of his creaking contract boots.

The chief evidence of smuggling as it has existed within the present century is furnished by certain articles which have been seized from time to time, and which are now lodged in the Custom-house Museum. It is to this Museum that we now intend to direct our readers' attention, and more especially to a certain large cabinet in the corner of the room, the contents of which supply a title to this paper. The first thing which is pointed out to us is a ship's 'fender,' which we may remind our readers is a block of wood with a rope attached slung over the bows to prevent the abrasion which might be caused by contact with another vessel. This particular fender was found to be hollow, and to contain several pounds of compressed tobacco. The officer who thought of looking for the soothing weed in such a receptacle must have been an extremely 'cute individual. But here is a still more extraordinary hiding-place, and one which must have involved a journey aloft for its detection—a ship's block, the sheave or wheel of which is actually made of solid tobacco. Here is an ornamental pedestal which once adorned the corner of a captain's cabin, and would perhaps adorn it still, had it not been found gorged with contraband cigars. Another commander appears to have been a more moderate smoker, for he was content with only two pounds of cheroots, which were found inside a sham loaf on his breakfast table. Here we have a number of cigars knotted singly on a string, like the tail of a kite; these were dropped between the inner and outer timbers of a ship's side; whilst holes drilled in the ends of an egg-box furnish lodging for several more.

A broomstick does not seem at first sight to offer much room for concealment, but here is one which, accidentally broken, revealed a core of that rope-like commodity known to those who chew the weed, as 'pigtail.' Cakes of tobacco formed to fit into the sole of a boot shew another ingenious mode of disposal. But the prize for inventive talent must certainly be awarded to the clever rascal who compressed snuff into slabs, and stamped them to exactly imitate the oil-cakes on which cattle are fattened. Whether the discovery of the deception was owing to moral objections on the part of some experienced cow to chew anything stronger than cud does not transpire; but the real nature of the food was somehow ascertained, and what might have proved the staple of a lucrative trade, was transformed into the original dust from which it sprung.

The stewardess of a Jersey steamer is the next delinquent who comes before our notice. On various occasions the petticoat has been found to be a useful auxiliary to the smuggler, and the one which was taken from this lady sufficiently proves the truth of our remark, for twenty-seven pounds of tobacco were hidden in its folds. Two more garments of the same nature contained respectively eighteen and twenty pounds of cigars; whilst another, with the help of a number of fish-bladders hanging from the waistband, was charged with several gallons of brandy. Bladders of cognac have also been found attached to a ship's keel several feet under water. It is to be presumed that the discovery of these last was not made in the Thames, the water of that river not being celebrated for its transparency. Artificial lobster-pots thrown overboard with corks attached, also afford favourite receptacles for various articles. Another stewardess, in this case belonging to a Rotterdam boat, did a little ostensible trading in pigeons. Here is the box in which they were caged, constructed with a false bottom, below which were hidden a few pounds of Cavendish. It is a question whether birds ever before so well deserved to be called *carrier* pigeons. The journey to Rotterdam is but a short one, so that although this lady did not indulge in such wholesale doings as her sister of Jersey, she worked on the principle that 'many a little makes a mickle.' Here is an apparently well-bound volume which a studious individual carried under his arm during the transaction of his daily business at one of the docks. It was found to be made of glass, moulded into the form of a book, and covered with leather. That it was a work of much spirit was proved from the fact that it was full of *eau de vie*. Another book is exhibited, the leaves of which are punched through with round holes from cover to cover, for the reception of watches.

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We are told that the detection of most of these contrivances for concealing goods about the person has been due to the nervous trepidation of the delinquents themselves; an apt illustration of Hamlet's words: 'Thus conscience does make cowards of us all.' It would seem an almost impossible task to secrete one hundred and forty-seven watches in a single garment, but nevertheless one individual succeeded in doing so. Unfortunately he found a difficulty in sitting down, and the continued fatigue of keeping his feet during a long voyage so told upon his nerves, that fancying he was detected and watched, he gave himself up to justice, literally clothed in his own confusion. Here we have four tin boxes about an inch in depth and about two feet square, having a capacity of four and a half gallons, which, filled with spirit, were found hidden below the clothing in a passenger's boxes. But the latest contribution to the Museum is a small quantity of treacle-like fluid labelled 'Nicotine Poison.' This is a sample of a consignment lately received from Hamburg, and politely returned to the port of shipment, by order of the Customs Board. It is imagined that some enterprising genius had it in his mind to convert by its aid the refuse leaves of the British cabbage into Havana cigars. We have already had experience of Hamburg sherry and Hamburg butter, and doubtless the Customs Commissioners had these commodities in view when they rejected the persuasive overtures of the narcotic in question.

Besides the things which we have enumerated, there are various articles of interest in this Museum. Several curious old prints, shewing what the Custom-house was like in the days when the London suburbs were little villages, separated from the city by some miles of meadow-land. It

was then the practice of the Commissioners to ride or drive to their duties, and stable accommodation was therefore a necessary adjunct of the premises. Here too are shewn the dies used when each outport had its own particular seal—this was years ago, before the telegraphs and railways had so effectually lessened their distance from London. 'Leverpoole' was then a creek attached to the port of Chester; on the other hand, many towns which have now sunk into comparative insignificance, were then flourishing sea-ports of great commercial activity. Some curious records relative to the payment of officers are also well worth attention. Here we learn, by marginal notes, that certain unfortunate beings are to be deprived of their salaries, 'they being Papists;' whilst one is mulcted of his due because 'his wife is now or was lately a Papist.' These notes were written in the year previous to that which saw the landing of the Prince of Orange, and they form a singularly terse comment upon the state of public feeling which led to that event. The world is now nearly two hundred years older, and has grown more tolerant. We cannot say that it has become honest; but for the reasons already given, it is not likely that many additions will be made to the curiosities of Smuggling.

THE MONTH: SCIENCE AND ARTS.

THE Royal Agricultural Society's *Journal*, No. 25, recently published, abounds with information likely to interest other persons as well as farmers. There is a good account of the implements exhibited at the Philadelphia Centennial Show, in which many clever contrivances are described, among them not a few shewing that Canada is by no means deficient in inventive ingenuity. Dr Voelcker in his experiments on roots explains that swedes when allowed to sprout a second time transfer two-thirds of their solid substance to their tops or leaves; and he calls attention to a series of experiments carried on in France which lead to the conclusion that 'roots mature more readily when planted closer, and often yield a heavier crop per acre, than when they are planted too widely apart.' In his chemical report the doctor exposes the trickery used in the manufacture of oil-cake, and says that he has 'considered it his duty to refer to these matters because he knows that mal-practices of cake crushers and dealers are again gradually extending all over England.' Then comes an article on the use and value of straw as food, which will surprise most readers; and next we find a Report on analysis of butter drawn up for the Board of Inland Revenue, in which the reporters state that the more butter is washed and kneaded to expel the curd the better will it be; and that 'while some of the finest and best prepared butters undergo little or no change, there is in others a gradual disappearance of the characteristic principles of butter, and a consequent assimilation to the constitution of an ordinary animal fat. This change, which appears to be due to an incipient fermentation, and is generally accompanied by the development of fungi, is probably caused either by the use of sour cream or by insufficient care in making the butter.' We only add the remark that the souring of butter is more frequently caused by negligence in washing out the milk properly than anything else.

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This seems the place to mention that a reward of three hundred marks has been offered by the Pharmaceutical Union of Leipzig for the discovery of a sure and practical method for the detection of the adulteration of butter by other fatty substances. The competing descriptions are to be sent in before September 30 of the present year.

Another article in the *Journal*, by the Rev. Canon Brereton, sets forth the advantages offered by Cavendish College, Cambridge, as bearing on the education of agriculturists. 'The time and the cost,' he says, 'of a three years' residence in College, after the school course is finished, have been considered incompatible with the obligations both of learning and earning, in the business of a farm.' But the reform of schools and the establishment of local examinations have 'not only made the general school preparation itself much more effective for after-life, but have admitted the possibility of adding to the school the further advantage of a college course, and this within the university, and in permanent connection, therefore, with the highest education of the country. In short, many a lad of fifteen or sixteen who has been taught in a good school has it quite in his reach to take a university degree at eighteen or nineteen, and then enter on his professional studies and duties with all the advantages of a completed education. To secure practically this important result, and to offer to such lads the best university instruction, with suitable protection and associates, and at a very moderate cost, the new Cavendish College is now being founded in Cambridge.'

In a recent *Month* (*ante* 270) we mentioned an exhaust nozzle for quieting the noise of safety-valves and escape-pipes. This nozzle has since been described in the *Journal of the Franklin Institute* (Philadelphia). It consists of a spiral coil of wire so compressed as to leave a slight space between the individual turns of the coil. This when properly adjusted is fitted into the end of the escape-pipe: the steam rushes out; but instead of communicating its vibrations to the air, communicates them to the coil. 'As, however, the individual turns of the coil cannot vibrate to any considerable extent without coming in contact with the adjacent ones, interference occurs to such an extent that the vibrations are *not* transmitted to the air.'

This useful invention (Shaw's Spiral Exhaust Nozzle) has been reported on by a Committee of the Institute, who in concluding their very favourable Report, recommend the grant of a premium and a medal to the inventor, and remark: 'In view of the annoyance, fright, and danger arising

from the roar of escaping steam, and of the completeness with which the nozzle destroys this roar, we are of the opinion that Mr Shaw has done a great service to the community, and particularly to the transportation interests, in overcoming an obnoxious and dangerous feature in the use of steam.' The nozzle, we are informed, has already been largely adopted in America. Shall we have long to wait for its introduction here? People who dwell in the neighbourhood of factories and thousands of travellers, are ready to give it a welcome.

Steam-power for tramways instead of horse-power continues to be a subject of experiment, with a view to prevent noise and escape of steam, so that passengers may not be deafened nor horses frightened. It was stated at a meeting of the Institution of Civil Engineers, that the best form of tramway is that which has the rails laid on continuous wooden sleepers, and that there will not be so great a saving as is commonly supposed by using steam instead of horses, for the repairs of the engines will be a heavy item of expense, and the engine-fitters and drivers will require high wages. Some inventors dispense with steam and make use of compressed air; and mention was made of 'a pneumatic car designed by Mr Scott Moncrieff which had been at work on the Yale of Clyde tramways. It carries one hundred cubic feet of air at a pressure of three hundred and fifty pounds on the square inch; and considering that everything about it was of a rough and temporary character, the success obtained was encouraging.' As regards capability, we are told that 'on the level, and on gradients up to one in thirty, engines can do all that is necessary. But the engine has yet to be designed which will stop and start again, with a heavy car behind it, on any steeper inclination without trouble and delay.'

On the other side of the Atlantic, a different conclusion has been arrived at, for, as stated in the *Journal of the Franklin Institute*, a steam tramway engine has been tried in Baltimore which, with a load of a hundred passengers, can be easily stopped and started on a gradient of seven feet in the hundred, or nearly three hundred and seventy feet per mile. It drew the same load through snow and slush ten inches deep, when four horses were required to draw an ordinary car. This engine weighs sixteen thousand pounds. On suburban roads it travels at from twelve to eighteen miles an hour. Compared with a two-horse car, it shews, in its working expenses, a saving of five hundred and fifty-eight dollars in a year. The power of traction is, however, of less importance than the absence of smoke and of noise from the steam that is employed. Several good specimens of smokeless and noiseless tramway engines have been shewn in this country.

A horseshoe which is described as 'partaking of the moccasin and also of the sandal' has been brought into use at Philadelphia for street traffic, with, as is said, satisfactory results. It is hollow on the under side, and the hollow is filled by a piece of tarred rope, which by deadening concussion, lessens the severity of the horse's labour and the wear of the paving-stones. This shoe is put on cold, and requires not more than six nails to hold it in place. Something has been heard too of a shoe made of compressed sole leather chemically treated, which is lighter and more lasting than iron shoes; but of this we have as yet no particulars. Lightness should be a recommendation; for if a set of shoes weigh two pounds and a horse trots one step every second, he will lift one hundred and twenty pounds in a minute; from which the sum-total of weight lifted in a day's work may be calculated. When farriers and all people who keep horses shall have some real knowledge of a horse's foot, then proper horseshoes may be expected to come into general use.

Mr Outerbridge of Philadelphia has succeeded in producing by precipitation gold-leaf so thin that with a single grain he can cover nearly four feet of surface. Nearly three million of such films would be required to make an inch in thickness. The films are not, as might be supposed, patchy, but are perfectly whole and continuous; they are also transparent, and serve to illustrate the green appearance of gold under transmitted light.

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A good example of the economy of fuel effected by the use of compound cylinders is to be seen in Cherry's Compound Steam-pumping Engine, which has been recently exhibited at Birmingham and at Falmouth. With four pounds of coal hourly for each horse-power, this engine, when fixed in a mine, will force water from a depth of more than a thousand feet; and it is of course applicable to overground work as well as underground work. The characteristics, as described in the Report of the Royal Cornwall Polytechnic Society, are 'extreme simplicity, the reduction of friction to a minimum, thorough efficiency of expansion;' and the entire cost of the engine will be less than the cost of the foundations for an ordinary pumping-engine.—With this may be noticed Stevens' patent underground Hauling Engine, which is so compact that it may be placed almost anywhere in a mine, requires no foundation, may be spiked to a piece of timber or wedged to the roof, and is not affected by the moving of the floor, which is not unfrequent in mines. Another advantage is, that it requires but a few hours to get it into working order, and may be driven by steam or compressed air at pleasure.

A common objection to ordinary fireplaces is too much of the heat wasted up the chimney, and various contrivances have been tried to prevent this waste, one of which was an iron plate instead of bars for the bottom of the grate. An improvement on this is Wavish's patent Coal Economiser, which has a hollow-pierced cylinder rising from the middle of the plate. The air entering the cylinder from below the grate is thus conveyed at once into the centre of the fire, and the heat, instead of rushing up the chimney in undue quantity, is diffused into the room, and coal is economised. The perfection of combustion is achieved when, instead of feeding the cylinder with the vitiated air of the room, it is fed by a pipe communicating with the external air. And further, we are informed that 'if a bag of camphor or other disinfectant is hung on the cylinder, the scent is driven into the apartment;' and thus any room in a house may be perfumed, disinfected, or ventilated by this contrivance, when properly fitted.

Among recent patents is one granted to Professor Sir William Thomson for 'improvements in

navigational deep-sea soundings.' With this apparatus a sounding can be taken without stopping the progress of the vessel, which is in itself an important advantage. The depth is indicated by appearances in a glass tube, which shew what portion has been occupied by air while under pressure beneath the water. A Frenchman has invented a sounding apparatus which consists of an india-rubber bag filled with mercury communicating with a valved metallic chamber. The pressure of the water forces the mercury into the chamber, and the quantity therein denotes the depth.

Hitherto the electric light, though a brilliant and powerful substitute for sunshine, has resisted the attempts made to bring it into general use. Clockwork has been required to keep the carbon points always the same distance apart, and as carbon wastes by burning, there was too often failure on the part of the wheels. But now Mr Jablochhoff, a Russian military officer, has discovered a way of overcoming the difficulty. His source of light being a magneto-electric machine, strong enough to produce, say, twenty minor lights, he connects the points where these are to be placed with the principal machine by means of wires. At each of those points he fixes an 'electric candle,' composed of two strips of carbon, and a central strip of a fusible and insulating substance described as kaolin. The current flowing from the machine passes up one of the carbon strips of the first candle, appears as a steady light at top, passes down the other strip, and so on to each candle in succession, and returns to the machine from the last of the series. The candles burn about an hour; but as four are fitted to each lamp, and take light one after the other, an uninterrupted illumination of four hours is thus provided for.

This method has been tried with approbation in Paris, and in London at the West India Docks. Gas appeared dull and feeble by contrast, and the onlookers came to the conclusion that by aid of the electric light the loading or unloading of ships could be readily carried on at night. A further advantage is, that the light is portable, and can be taken without danger into the hold of a vessel. Thus by subdividing a single current and leading each division to a 'candle,' it seems that the question of utilising the electric light is likely to be solved.

Mr C. Meldrum, F.R.S., Director of the Observatory at Mauritius, devotes much time to observation and discussion of sun-spots, rainfall, and cyclones. After carefully considering and comparing observations made in all parts of the world, he finds them corroborated by those of his own locality, and that there is a decided and apparently persistent difference between the rainfall of the period of most sun-spots and of fewest sun-spots: the law being, the more spots the more rain. He finds further, that the increase and decrease have recurrent periods, that there are cycles of rainfall, of sun-spots, and of cyclones; and he remarks: 'Although the question has been brought forward simply by way of hypothesis, yet it appears to me that, on the whole, the evidence in favour of a connection between sun-spots, cyclones, and rainfall, is so strong that any doubts or uncertainty that may now exist will soon be dispelled.... The hypothesis does not require that the years of fewest spots must necessarily be years of drought, and those of most spots necessarily years of torrential rains over the whole earth. It merely requires that the rainfall of the globe should be subject to a variation having a period of the same length as the sun-spot period. Observation shews, however, that the years of fewest sun-spots are those in which severe droughts are most to be feared.'

'It would be a hopeless task,' continues Mr Meldrum, 'to try to convince those who judge of the matter only by their sensations, that less rain falls over the globe in some years than in others. Great floods and great droughts, especially floods, make deep impressions on the mind, particularly on the minds of those who may have suffered from them. If in a certain year a man was ruined by a succession of floods, and in another by a succession of droughts, it might be hard to persuade him that, generally, the former was a remarkably dry year, and the latter a remarkably wet one. The opinions of people who trust to their sensations in a question of this kind, are swayed from side to side by every change of weather. It is only by taking annual averages for many places and many years that the truth comes out.'

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Papers bearing on this question were read during the past session at the Royal Society, shewing that by careful observation of the periodical phenomena above mentioned, it would be possible to foretell and provide against the calamitous seasons of famine which occur in India. This would indeed be a beneficent application of physical science; but the results of observation are not yet sufficiently definite. General Strachey, F.R.S., read a paper to prove, by a negative process, that 'there has been no sufficient evidence adduced of any periodicity at all.' Thus the question remains open to further observation and argument, of which there will be no lack; but we may anticipate that a profitable direction will be given to both by the new Council appointed by the Treasury to govern the Meteorological Office. This Council comprises the Hydrographer of the Admiralty, and five Fellows of the Royal Society eminently qualified to deal with scientific questions and direct the work of the Office.

A FIJIAN TRAGEDY.

THE following sad story is correct in its details; it occurred within the writer's ken, and may serve to illustrate how English civilisation and laws affect the Fijian mind and mode of thought. About four years ago Ravuso Ioni was the principal chief of Waia, one of a group of islands the most westerly in Fiji, called the Yasawas. About that time the parvenu Fijian government had just been formed; and we planters and natives were blessed with a travesty of English laws and institutions

down in the Yasawas: one of our planters was made a warden, a court-house was established, and a posse of native police sent down. It need hardly be said that these proceedings were a mystery to the natives; and even close to Levuka, the more enlightened of them could at first hardly be brought to understand the idea of any government. At all events, Ravuso troubled himself very little about the new *nata-ni-tu*, as the government was called by the natives, but carried on in the old Fijian style of his fathers. Now there was a young man in Waia who made love to all the young girls; and not content with that, he also paid his attentions to the married women. The Fijians are a jealous lot; and by-and-by a mob of angry husbands complained of this young fellow to their chief Ravuso, who, with the advice of the old men in full council, decided that this gay lover was to be buturaka-ed, or turkey tramped as we whites call it. This buturaka-ing is an institution peculiar to Fiji. The unfortunate is knocked down; and the natives dance and jump on him until he is insensible and nearly dead. A man seldom recovers thoroughly from a good, or rather a bad, buturaka-ing.

Some, doubtless, of the jealous husbands or their friends were among the party that buturaka-ed the gay deceiver, because they carried out their orders so well that in three weeks after the young fellow died from the effects.

In the old times, most of us whites and natives would have said: 'Serve him right,' and the matter would have ended. But now there was law in the land; our warden was just appointed, and, new-broomish-like, ordered the arrest of Ravuso. After some trouble, he was coaxed to surrender, and was confined at Somo-Somo, awaiting trial. Nothing so puzzles a Fijian as the slow procedure of our English law; and poor Ravuso pined in prison. So one day he asked his *Ban* (jailers) to be allowed a walk: they accompanied him; and all sat down under a large ivi tree. After a time the chief proposed to get some ivis, and climbed the tree for the purpose. When he got to the top, he called out to his astonished guards that he was going to throw himself down headlong. 'Tell your white judge,' said he, 'that I am a chief and the son of a chief; that I can't survive the disgrace of being imprisoned like a felon; that the punishment given to the man of mine was just—he was a bad man; that I am a chief, and had a right to punish him vaka-viti' (after the manner of Fiji). So saying, he threw himself down, broke his back, and died shortly afterwards.

In a day or two the news of the chief's death reached Waia, and a wail went up from each little village embowered in its cocoa-nut grove, for the death of their 'Turaga,' as they call their chiefs. His wife, Lau Wai (to strike water as in fishing), and young daughter (fifteen years only) made up their minds that their chief should not go unaccompanied to Hades, but have some one to cook and look after him there. So one night they tied a rope between two trees, twisted it round their necks, and so strangled themselves after the old Fijian fashion. These people had been Christians ten years, but evidently believed in their old traditions still. Our warden was not a bad fellow, and I believe the unfortunate result of his first attempt at enforcing English law among the natives caused him many a pang.

And now the sad tale of the death of this unfortunate Waia chief and his family is told in many a Fijian hamlet, in the cool evenings, as the sun goes down under the shade of the lofty ivis and cocoa-nut trees; and the women and children hear with a thrill of the power of that mysterious *mata-ni-tu* whose action hurled a Fijian chief from his high estate, and sent him and his devoted wife and daughter prematurely before the face of their Maker.

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