JULY, 1889.

The monthly evening meeting was held on July 9th. The President, His Excellency, Sir Robert G. C. Hamilton, K.C.B., presided, Lady Hamilton was also present.

Mr. F. Back, General Manager Tasmanian Government Railways, was elected a Fellow of the Society.

TASMANIAN TREES.

CORRESPONDENCE.

Bell-street, Domain, Hobart, June 12, 1889. Dear Sir,—By this morning's *Mercury* I observed an interesting letter from Mr. F. Stanley Dobson, referring to what steps had been taken in order to ascertain by careful measurement the height of forest trees in Victoria. We have very little reliable evidence as to the exact height of the tallest Tasmanian trees. Some years ago, the Rev. T. J. Ewing, of the Orphan Schools, New Town, was engaged under the authority of the Government to compile a short paper on the statistics of the colony, wherein was mentioned the measurement of several trees of exceptional size, but none (trusting to my memory) reached 300ft. One was stated to be 240ft. to the first branch, where the tree had been broken off by wind, and the remaining portion guessed at 50ft. or 60ft., therefore the true height was left still conjectural. Many years ago I accompanied the late James Sprent (Surveyor-General) up the spurs of Mount Wellington, where it was thought the tallest trees of Tasmania would be found. We, however, did not meet with anything like 300ft. We measured the root of a large stringy bark (*E. Robust*), and ascertained its circumference to be 14ft. close to the butt. On my own farm, Circular Head, I had a tree felled away from the house, upon which I placed the 2ft. rule, and found the height to be 218ft. 6in., 12ft. at the butt in diameter. About 24 miles south of Stanley, Circular Head, I met with at the foot of a steep hill, near the banks of the River Arthur, a bed of trees of extraordinary height, where some might possibly reach 300ft. There are exceptionally large and tall trees at Table Cape, North-West Coast, growing all along its summit and in the deep gullies, attaining great height, but whether above or below 300ft. could only be ascertained by proper tests. I employed splitters at Circular Head who produced 13,000 and 11,200 5ft. palings from two trees, some of which were sold at Melbourne at the rate of 105s. per 100, 1852 and 1853. It would be very interesting if the Royal Society of Tasmania took steps to procure authentic statements of the height of our forest trees, and to clear up as well the statement that the trees of Tasmania in their growth make two rings every year; upon one occasion I put it to the proof by cutting down a young sapling 16 years after it had been planted, and found 16 rings only. I think the age of our trees has been much exaggerated, and that the true time of growth is far less than is generally supposed. I cut a tree at Piper's River evenly with the crosscut saw, and found 151 rings distinctly visible; its height was 155ft., and thickness when felled 5ft. 2in. and 4ft. 10in., or about a mean of 5ft. I refer you to Ainsworth's "All Round the World," 1st and 2nd vol., for photos. of giant trees of Sonora, 460ft. high.—Yours truly,

S. B. Emmett.

Dear Sir,—Having read the enclosed slips which appeared in our paper, and observing your name mentioned in one of them, I take the liberty of telling you that I discovered a clump of trees (silver topped

stringy bark we call them) some 15 years ago under the south end of Mount Barrow. Having noticed in Sturt's map a patch marked "impenetrable scrub" I had the curiosity to force my way through it, and so found the trees in question. As well as I can remember, there may be about a hundred of them, one being 33ft. through by actual measurement with a tape, and, I should judge, 400ft. high. The others are all about 20ft. to 25ft. through, and as square as a dry goods box, and would split like matches. None of them, except the large one, have a blemish of any sort, but run up hundreds of feet without a bough. The large tree is burnt through, there being a passage wide enough for a man to walk. The first time I saw it I could only measure it by pacing, but a few days afterwards I got two of my brothers to go up with me, taking a tape, and we then found its actual measurement as stated above. In all my travels about Tasmania, prospecting and otherwise, I have never seen a tree to compare in any way with this colossus, and it is worth going a good way to see. I often think of these trees and endeavour to form an idea as to how many palings one of them would split. I may say that I was one of the Government party that cut and surveyed the track through the great Gippsland scrub from Moe to Stockyard Creek and saw some big trees, but none to compare with the one in question. Apologising for trespassing on your valuable time.—I am, dear sir, yours very truly and obliged,

CHAS. B. BARKLEY.

A letter from Mr. A. Johnston, addressed to Colonel Legge, was also read, wherein he directed attention to having brought under Colonel Legge's notice some years since a tree measuring 295ft.

SELF-REGISTERING THERMOMETER.

Captain SHORTT laid before the Society a chart showing the registration of temperature by a self-registering themometer recently received from Paris. He explained that the instrument did not move by means of spirit or mercury, but on an entirely new principle, *i.e.*, the expansion of a curved piece of brass.

TERRA AUSTRALIS.

Mr. MCCLYMONT read a paper on the misconception existing in earlier times on this subject. He dealt with the probable discoveries made by early Portuguese and French voyageurs.

OLD TASMANIAN CHARTS.

Mr. MAULT apologised for his inability to lay his paper on this subject before the Society at that meeting.

Mr. MCCLYMONT explained the circumstances which had given rise to inquiries being made respecting charts captured from Captain Hayes by the French.

THE TRUMPET FLOWER.

Mr. WARD related the results of recent analysis of a portion of the plant mentioned by Dr. Hardy at the last meeting. He had discovered only a small trace of atropine present.

SMUT IN WHEAT.

Mr. Joseph Barwick contributed the following paper on this subject to the Council of the Royal Society of Tasmania, and it was read by the Secretary at Monday night's meeting. In his paper Mr. Barwick said :— My apology for addressing this paper to you is that we have no Farmers' Club in Tasmania, or experimental farm, and my object is to ask that a small space in your Botanical Garden may be granted to test the cause of smut under your manager ; but before asking for this unusual concession it is due to you that I should explain a few of the tests that I have practised for the last 15 years. It is a fact that this pest has hitherto defeated all attempts to discover the cause, which I can fairly claim to have discovered, and it was in this way. In 1873 I had a small paddock to sow with wheat, which I sowed with wheat threshed by steam machine, but in completing the sowing I had not sufficient dressed, as we term it, with blue stone, and I took sufficient from a bag, which I sowed without dressing. The result was that only about 25 per cent. of the dressed wheat came up, but that which was sown without dressing produced upwards of 80 per cent. of plants ; but upon the wheat coming to maturity I found that there was no smut in that which was dressed, but that the small piece sown without dressing contained more than 60 per cent. of smut. I then measured a square rood of each, and counted the plants which had produced perfect wheat, with the result that the number was nearly as possible equal, which at once struck me that the dressing had simply destroyed that which would have proved smutty. This induced me to enter into further tests the following year, which I applied as follows :—(I must explain that in those days it was not safe to sow wheat threshed by steam, consequently we used to get sufficient threshed by hand for seed.) I rubbed out 200 grains of wheat from stock which we were then threshing. I took another 200 grains of that threshed by steam, 200 do. threshed by hand. I divided these into two equal parts of 100 grains each. The first division I dressed with bluestone, the other division I planted without dressing, with the following result of that which was dressed :—No. 1. The 100 grains rubbed out by hand produced 96 plants of perfect wheat. No 2. Threshed by flail, or what is called hand-threshed, produced 81 plants of perfect wheat. No. 3. threshed by steam, produced 60 perfect plants. I will now ask you, gentlemen, to mark the result of that which was not dressed. The 100 rubbed out by hand produced 98 perfect plants and no smut. That threshed by hand produced 90 plants, 81 being perfect and nine smut. That threshed by steam produced 81 plants, 50 being perfect and 31 smut. This result confirmed my previous experience that it was the damaged grain that produced smut, and that the dressing simply destroyed these grains and prevented them from germinating, but I did not stop here. I planted other beds with samples threshed as described, and took up the plants as soon as they came out of the ground, and I discovered that these damaged grains, unlike perfect ones, came to the surface before shooting any roots, and that the roots when they came they differed from the perfect roots by spreading in to a delicate form near the surface, instead of a strong, healthy, root penetrating downwards, and during one test I divided my plot, and by trying the plants with the finger and thumb upon one half of the plot, and taking out those that came too readily I succeeded in taking out all the defective plants but one, as shown when the wheat ripened, for I had only one smut plant left when in the other half, I had 31 smut plants. I have followed up my tests from year to year with the same result, and have never produced a smut plant from grain rubbed out by

hand, and not injured, and I have come to the conclusion that smut is the result of defective rooting of these damaged grains, and if my contention proves correct an enormous saving can be effected by introducing machines coated with gutta percha, including loss of time, cost of bluestone, and destruction of wheat would amount to a saving of fully 3s. per acre, but there are other causes of smut quite beyond the control of man, another strong proof that I am correct, and that is atmospheric influence; for instance, the past season was most prolific in smut, and in every case I found it was upon the high lands, it being too dry to allow the roots to penetrate to a sufficient depth to mature the grain. I found during the last season heads one half smut the other half perfect wheat, and in one case one grain half smut and the other half contained flour, and in all cases the upper half is the smut. Again, in the very wet season smut may be found, but it will be found in the low and wet portions of the field, the root having been injured through too much moisture. Our grasses often prove smutty, but it is only the annual variety that can be found smutty. The perennial plant has established the roots to a sufficient depth to mature. I have read, from time to time, the theory that smut is caused by infection in the stack, and, giving as a proof that self-sown or shook wheat is never found smutty. The truth is that this self-sown grain is not subject to injury in threshing, and will support my experience with reference to infection. I have, upon several occasions coated wheat that I had carefully rubbed out of the head with smut dust, but have never produced a smut head from sound grain. I hope the tests explained have had the effect I desire of interesting you in a problem that has hitherto baffled all attempts to solve. To permit some tests to be carried out in your gardens under your manager, I will undertake to supply seed prepared in various forms for the test and numbered. I am sure the tests would be interesting. Again apologising, gentlemen, for bringing under your Society what very properly should have been a farmers' subject to deal with.—I am, etc.,

JOSEPH BARWICK.

The Secretary intimated that the suggestions would be laid before the Trustees of the Museum and Botanical Gardens.

The PRESIDENT, in moving the usual vote of thanks to the contributors of papers, expressed the hope that something would be done to meet Mr. Barwick's suggestions.