

May do so at last, I do not want to begin current ¹⁰¹ sub-bakhshich. As M. cannot speak a word of English, he does not attempt to explain the situation to me; but for an extra, such as D^r Grants Δ night, I privately give ~~extra~~ 4^d or 5^d.

Tuesday 18 Jan^y After breakfast set off with Ali for the Pyramid. Copied a few more graffiti which he came up, making 60 in all before 1700, & I know of about 20 or more still to come, but not over $\frac{1}{5}$ or $\frac{1}{6}$ are English; mainly Italians. In Queen's Chamber measured all the courses up each corner, or rather each edge of each wall, not easy because they are so thickly encrusted with salt, especially on the lower parts. Then took depth of floor (or rather of basement of wall, projecting thus below the first two courses; as floor is manifestly prepared for another coat, & is all uneven; not merely from stone to stone, but stones with sunk parts to receive the next course, exactly as on the outside masonry. I do not believe it ever had another course, since torn up, as there is no trace of it on the walls. Also took height of door, & of niche as a whole to test my piece meal measures of yesterday; they agree well, by separate overlapping, yesterday ^N 116.63 ^S 116.83 by whole measure today - - - 116.61 116.74

C.P.S. is therefore very far out in making it 119.1

Then noted details of niche which prove that it never extended beyond 41 from E wall, backwards. Then hung plumbline from Δ of roof on W wall; & took offsets to W N & S walls. Then put plumb line to E wall, as yesterday,

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 & took offsets all down E wall, distances to N & S walls were done yesterday. Then took total lengths along N & S walls, & in middle between the plumb lines. This, except for the ^{possibility} of curvature of E & W walls, I have complete measures of this chamber for distances & verticality of all the walls, heights of all courses, & every dimension of the niche very fully. This is all much needed as C.P.S.'s measures are often out; I think he was discouraged by the uneven floor, & the quantity of salt on the walls; I have in most cases estimated allowance for this, & in perhaps the greater part of the measures secured them on clean surfaces of stone. I find the E & W walls tip in, ^(not the N & S) the E 1.03? & W 0.91 ~~about~~ so the top is 1.94 shorter than the floor; or 227.45 below, & 225.57 above, in the middle: agreeing with side measures of 227.41 N & 227.61 S on clean walls; all thus shewing C.P.S. 226.5 & 227.2 to be too short by encrustations. Then ^{started} back about 7, & had supper; reduced measures of ceiling ^{mean $30^{\circ}39' \pm 3'$} as they were complicated & wanted to do them while clear. Then wrote this, & to bed abt 11.0.
 Two travellers who came in, in a breathless state, all streaming from the heat & exertion, were astonished on my saying that I staid there 6 hours a day; they said they should be dead in an hour. They are as a whole rather amusing, not enough to be troublesome, & all too hot & uncomfortable to wish to stay, for talk or mischief. Ali tells of one active man who came over two or three years ago, & went up the 1st 2nd & 3rd Pyramids, all without help; pelting Ali when he went to him on the 2nd, which is very difficult in any way.

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Wednesday 19 Jan^y

Did not sleep at all well; the dogs were very noisy after their donkey festival, & I had to run out & pelt them. Got a sleep in the morn. & therefore did not finish breakfast & get off till 12. Settled not to go into Δ today; it certainly makes one feverish at night from the dust, close air, & battyness. Went over & measured several of the west tombs, during afternoon; looked at one or two points for the survey, & then back to supper on tomatoes. Afterwards looking over triangulation arrangements, & was in / <then> to bed early, as I find myself $\frac{1}{2}^\circ$ too high; this was also the case <(1°)> on Saturday even, after that well expedition. I see that I must mix inside & outside work, to do it comfortably. To day was a heavy close hazy day; sun setting in purple & yellow.

Thursday 20 Jan^y

Comparing all the rods which I have been using, & shall use; for Kings Chamber, with the standard. Find they have sh contracted average $\frac{1}{7000}$. The greatest correction I shall have to make to any of my past measures is $\frac{1}{50}$ inch; & none to most. This was a long job, & I had to make several preliminary & permanent changes in arrangements here, so truly finished about 5. Then took a run out with Ali hunting pottery &c; & then after supper sat down to planning triangulation; settling the best number of observations between all stations so as to give a uniformly accurate result a matter requiring much consideration. Stopped at $\frac{1}{4}$ to 11, wrote this & to bed. I made careful notes on objects found with the little coarse pots & saucers [P] attributed to 4th Dyn, & find them all of a later date; thus agreeing with their being unlike the true early pottery.

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Friday Jan 21

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 Friday Jan 21 Off to N. air channel ^{before 10} & made another effort to get through sand by gas-pipe poking; but ran on bits of limestone, & could get only $4\frac{1}{2}$ ft into narrow part of channel; as I was working at top side of channel, the stones there shew that sand must extend some way farther, so gave it up. Then measured size & angle of channel, & then came down as Ali wanted to go to mosque. Must say his devotions are somewhat provoking to an unbeliever, or rather perhaps his pleas. However as I told him I should quickly be going back to Δ to go in, he was good, & returned soon today; so after cooling & oranges &c, I went back to inside work about 1, & looked at some points of Q.C. to verify measures; then had ladder up to K.C. Here I specially examined course thicknesses; finding them vary from 46.95 to 47.18 in different parts of the corner, ^{top courses spread} which I measured up from floor to ceiling, with rods all put together in one length. The mean course thickness, excluding ^{bottom} top which is not so certain, is 47.063 mean diff $\pm .013$
 the bottom course where exposed 47.039 and $\pm .023$
 top course to ceiling 47.019 and $\pm .020$
 This was all slow work as the accuracy was to the full limit which I could manage to estimate, on such badly defined edges. About 6 $\frac{1}{2}$ I stopped, & came back to supper: tomatoes as before, but I cannot make them as good as Allison does, too watery; I suppose they want more butter & some milk, but I am afraid of burning the pan if I stew too dry. Then finished settling all the obs^{ns} required for the triangulation, about 600; then wrote up this, & to bed about 12. A friend of Muhammed

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has been up here firing twice, why or wherefore I know not. The shekh is settled I think well; a police officer came over to look after the ^{viceroy's} kiosk here; & the shekh told him about my being here, & said he was thinking of going to the mudir of Gizeh to enquire about me; so the officer told him he need not trouble, as he had seen the Consul's letter, & the Prefect of Police's permission, that was all known about by the police, & the shekh was to take care I was not molested, this is very good, as all the Arabs here are ~~sure~~ sure to have heard it & know of it; & Ali is dryly amused with the affair. I think the shekh only wanted to try irritate for bakhsheech, which was just the way not to get it; as he never came down here to see the letter, though Ali told him to do so; & he never spoke to me when I passed him at Δ ; of course not knowing him for certain, I skimmed along past him more than once without taking any notice whatever. Ali is strongly averse to my giving him anything, & this must be a genuine part of his desire to save one's pocket (whenever he is not concerned); Dr G. thinks a little feeing desirable sometime, & I shall consult him on it. The Viceroy's son gave the 2 shekhs 10£ & a cashmir shawl; this last has furnished them with quarrelling matter for many days, one wishing to follow the judgement of Solomon & halve the disputed property; the other taking it over to try & hawk it away in Cairo;

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^{106a}
 the first declaring that he did not get proper
 offers & taking it over to Cairo another day; one saying
 the other might have it for 5 Napoleons; &c, &c; keeping
 the community lively; I have not heard the end yet.
 I heard that Mariette is dead, & that the Museum is
 by terms of his founding to be divided between French
 & Egyptian; everyone thought it to be all Egyptⁿ
 Gov^t, & certainly any such arrangement has been
 kept very quiet.

As this up Sat. morn, ready to send in if opportunity
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Cairo
 -VI-

Saturday 22 Jan^y

(107)

Saturday 22 Jan 7 After putting up last journals ready for post, went with Ali to Δ . He found a man going to Cairo, to whom I gave letter, & order for any letters for me. Then into Δ about 11. Went to King's chamber; hung a plumbbob in each corner from the ceiling, (finding my waxed holders very useful) & took offsets of top & bottom of every course of each wall, thus plumbing it most thoroughly. Then with steel tape measured distances of plumb bobs on floor, they being all close to 50 inch marks (i.e. 200 400 & 450 owing to plumb lines being 4 or 5 ins out) so that minor lengths were all readable with ivory scale. Though I could not go along N side owing to big hole in floor, & stone in the way, yet took both diagonals, & so obtained \square as well as the angles, the only losing a check. This occupied till 6; & though I took in bisects I did not stop for anything, as having plumb lines fixed I could not risk travellers disturbing them (especially one over doorway) so worked quickly ahead. Only two travellers came, & were a hindrance but no trouble; & the only other delay was an ugly tumble into a big hole quarried by Howard Vyse in the floor, which gave me a headache & some bruises, including one on my jaw which bled slowly for some hours; the best thing it could do, but rather sharp considering it was through whiskers. This made climbing ladders, & stooping my head on the floor doing the tape measures, rather unpleasant; but I had too much work spoilt if not finished off tonight, to make me stop for a trifle. Then out again & home. Had supper,

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(108)
 (tomatoes again) & then worked out the measures clearly, calculating the plan of the plumb lines. The length of K.C. I find vary

N	S	
412.354	412.252 min: at top	} of steel tape at 6°F over its standard temperature.
412.957	412.930 max: at base	
E	W	
206.286 min: at middle	206.072 min: at middle	} of steel tape at 6°F over its standard temperature.
206.581 max	206.527 max, base.	



probable error about .006

The greatest inclination of any of the walls being the E. wall at N side, .866 tilt in at top. This does the King Ch. horizontal measures as thoroughly as necessary I think. The levels of floor 1st course & ceiling remain to be done by theodolite, with two observers. I saw an interesting diagonal hollow about 4 ins wide & 1/10? deep diagonally across face of big stone over door, shewing how they worked it plane by cross drafts worked first of all. I also found yesterday the remains of two big bosses on one of the wall stones, which had been dressed out, leaving only abt 1/4 raised, but much rougher than other part of stone. All these are visible when measuring & examining with a candle held close to the wall, so as to shew the least fluctuation of surface. Many stones have wavy patches in them; most have a slightly raised band around them about 2 ins from edge, perhaps 1/50 inch high. Ali found a stone of 3rd Δ of the granite casing with a boss on it never chiselled off at all, standing in situ among the rest of the unmoved

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


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

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casing. I have a batch of 2nd & 3rd Δ limestone casing angles  & , & about 40 of 1st Δ; Ali has ⁽¹⁰⁹⁾ about as many of the 1st Δ so I shall have a fine lot for selection. Only one corner of 3 planes has been found lately; & I have also secured the only bit yet found with apparently a scrap of hieroglyphic on it; it is not a Greek or Roman letter; and if hieroglyphic is only a visitors cutting in Egyptian times.

I copied a batch more visitors names from top of Grand Gallery, after finishing Kings Chamber; making 73 before 1700, & still I have to look over the top of the Δ, every inch of which is cut with names; but the early ones are mainly lost as blocks rolled down a century or two ago: I found Bruce's among others, & pointed it out to Ali, telling him to show it to any one specially interested in Δ.

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


Sunday 23 Jan 7 woke rather stiff & sore from my bruises, but without any feverishness from my two days in Δ. After breakfast, & a read, with the happy feeling that it was not my duty to rush out & do as much as possible, I took a stroll, but was not inclined to go far. On going along the rubbish on E. face of Δ I saw several bits of casing angles, & picked up 4 bottom angle  which is not so common, & a special prize of two corners  top & bottom . Then

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the ⁽¹¹⁰⁾next thing I sighted was fragments of casing of the little Pyramids, which I was glad to secure as I had not yet seen any evidence of their being cased, or whether it was granite or limestone. Then passing them I came on a patch of ground full of beads, & bones of bats, evidently the clearings out of some tombs; I picked them up at the rate of 200 an hour. This place is so full of antiquities that something always turns up, go where one will; something worth notice, to say nothing of the whole soil being composed of masons chips, pottery, & bones. Sometime after I sighted Ali & sent him to my tomb with some of the casing, while I brought the rest. Then after admiring the sunset prospect, I turned in for supper.

I think I shall hunt up the Presbyterians next Sunday, the Church is so broad; not offensively so, but still not very edifying. The P's are not down in the guide as having a Church, so perhaps it is a service in their mission schools; I must ask the Grants. Several reasons prevent my going to Cairo every Sunday; one is, there is not much to go for; another, I do not wish to be away from here regularly on any given day, so that ^{the tomb} it should be known to be left ^{empty} once a week; another, that ~~it~~ getting up earlier than usual & shaking 17 miles on a donkey is not having a day of rest, such I really want. Walking in I eschew as I know I should be not so active next day, & I cannot waste time that way.

The Shekh of the village (not the guides) came & squatted in

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the doorway this morning. I was at breakfast, so handed him out hot coffee & oaten biscuits, while he chatted to Ali. He had been telling the shekh of the guides that the latter had nothing to do with me; that I regularly engaged a man of the village, & hence he considered that that ought to be sufficient; & that farther as I lived just over the village I belonged to the village shekh, & that as he was satisfied with my being there, the shekh had no business in the matter. Ali gave him a long discourse about my valuable backings; & the consul, General Stone, & the Reis ez-Zabtiyeh (Prefect of Police) sounded continually in the flow of talk. He popped off very unceremoniously, & was not at all on the look out for baksheesh apparently. I am in no hurry to begin black-mailing for Ali is dead against it; & as he says "once put your hand in your pocket here, & you never take it out again".

Monday 24 Jan 7 After breakfast off to get & fix blocks for the ends of the base; I selected blocks of basalt, as there is none thereabouts, & hence it is easily recognised, but being very common not far off it will not attract the Arabs, they were about 60 & 40 lbs; I wished for a heavier stone to take it with Ali by rope & pole, but found it too much for me. I buried these slightly below the surface, with the top worked faces nearly level (within 1 on 100), & resting on smaller pieces in the

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 note (I had selected them to be concave, not convex,
 below, so as not to roll or rock in the ground) with
 the length in the direction of the base. Then drilled a
 hole ^{in each block} $\frac{1}{3}$ inch, but not deep as drill was blunt, put in
 plaster & left pencil graphite projecting; ~~put~~ sanded
 it all over, put a block of known stone on the mark,
 & a small cairn 2 $\frac{1}{2}$ ft S. of it to find it by. This will
 preserve it perfectly I hope, & the cairn need not be
 disturbed in using it; the bulk of the stone is in the
 direction of the opposite terminal, so that it need not
 be pressed by the observer in using it. Then, being
 pretty well roasted, I went off to a fine tomb which I
 wanted to copy; got tucked in, & sent Ali off to his dinner,
 had biscuits & began work. Two Greeks came in with
 Arabs, one smoking which made the small chamber
 almost unbearable; he scribbled his name, though
 I remonstrated that it was barbarous & forbidden.
 I worked on & Ali returned, then going on quicker with
 him holding the candle, I at last finished by $\frac{1}{4}$ to 7,
 having begun about 2, & copied nearly 2000 figures.

It was very comfortable work, a tolerable supply of fresh
 air, & neither hot nor cold; so I was glad to take it to
 day, as I am still rather queer with my bruises.

A man from the Police or the Antiquities department
 has been over giving orders that the shekh is not to

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assist any travellers to ascend the Pyramid; if they choose to go up by themselves they may. The shekh said that he already had an Englēz here who would go up by himself, & had an order ~~to do~~ ^{for} it; but the official took no notice. Ali says he has been here in previous times giving the same orders; Ali believes ^{he does so} without any authority, & solely to try to get bakhshesh from the shekh, & to be able to report that he had been attending to the preservation of the monuments duly. This looks very likely as anything really official would forbid the ascent at all, but this fellow knows the travellers would make a row at that, so he forbids the Arabs accompanying to get their fees. Ali says that two ladies and a boy went up sometime ago very slowly & carefully by themselves over the entrance, a most dangerous way owing to the steps being all covered with debris; & I would not do it on any account. He also says that Wayman Dixon took two ladies up without attendants, going before & shewing the way; this is easy & safe enough up the regular corner, as it is quite clear & well marked. It is laughable to see a man in huge pith hat on a cool & windy day, being ~~pre~~ helped by three Arabs to ascend, & brought down with a rope round his waist held by one behind. As Ali says "all humbugging with rope to get money". After supper

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sketched off rough plan of tomb to accompany a copy of the ¹¹⁴inscriptions; copied some of his testimonials into a strong book for common use; for they were so rotten as to be in peril on a windy day; looked over all his bundle in the morning & selected as good ones Carl Haag, Dr Lonsdale, Mariette, (brother of the Pasha) C.P.S., Wayman Dixon, Gill, Prof Watson, Prof Davidson, & these I shall copy for him. Stanley of Alderley had written a good one, but put a ? after every point of recommendation, a queer joke: two Americans amused me, one said Ali guided him "to my satisfaction & his own"; & another commended him for being respectful, a truly democratic idea, which never occurs to other men to mention. Then wrote up this & to bed about 11.

Tuesday 25 Jan^y

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Off tolerably early to King's Chamber, & measured all the ceiling joints along both N & S walls; a very troublesome job, as I had to get down & move the ladder for every joint. There is a curious skewness between the two sides in parts, shewing that the beams are not equal width all along. Every beam is cracked across close to the S. wall, & gaping open as much as .3 inch. Then having finished all ladder work in this Chamber went down to Queen's Ch; & there measured a line down each gable end to be taken in in levelling there, measuring all the courses. Then after making notes on the floor, I took all the ladders &c out of the Pyramid. The 140 inch ladder would not go out of Al Mamoon's hole; so I took a pick & cut away the earth

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in the entrance passage somewhat; & found that when all the earth was cleared at the part required, it would just pass the stone; it was taken in in pieces. Then had lemonade & biscuits about 3; & then off with theodolite to line for base; paced & marked all the critical points of the curves of the ground, & after waiting a little Ali came from his dinner, & I set him to hold a rough levelling staff (bits of wood tacked across a rod at every 10 ins, to be easily visible) at each point, & took a section thus. Then used the twilight in hunting the rubbish heaps for casing & got 10 pieces more, one the first piece of the corner arris angle that Ali or I had yet seen, very small & bad. I got a fine piece of 3rd Δ arris the other day. Then dropped into tomb which I copied the other day, & verified several points of inscription. Then back in dark to supper. Then <plotting section of base line & considering it> drawing off list of Gills stations stating condition of each, which Genl Stone asked me for. Copying hieroglyphics. Writing this till 1/4 to 1, & to bed.

Wednesday Jan 26. Off with Ali, & uncovered site of Δ^2 ; only found three small rough holes & nothing to shew where the corner was. Then to SE SW, & there found a good projecting rectangle cut out of the rock exactly in the right place; an intelligent man (retired officer I think) came & had some talk with me on it. Then lightly covered it again, & to SE; here found at least two feet of sand, so could not do anything at present.

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Wednesday Jan 28/<6>.

Off with Ali, & uncovered site of <NW> socket of Δ^2 ; only found three small rough holes & nothing to shew where the corner was. Then to SE SW, & there found a good projecting rectangle cut out of the rock exactly in the right place; an intelligent man (retired officer I think) came & had some talk with me on it. Then lightly covered it again, & to SE; here found at least two feet of sand, so could not do anything at present.

Then off to 3rd A, & dug at two corners, but found that they were all encumbered with fallen blocks of granite casing, & would take a good deal of work to clear them. Then had a look over the site of pottery by 3rd A. Then to NE corner of Δ^2 , & cleaned the rock; found only one rough small hole, in just the line of the corner edge, but nothing like Great Pyramid Sockets anywhere. Then home to supper.

I wanted to see how much could be cleared & surveyed quietly, & without engaging labour; & then I know what will be necessary, & how far I must get official permissions &c; though I should defend anything I did on the ground that it was not to find antiquities, but to do the measurements which were permitted. Then by 8 o'clock sat down to writing. Copied hieroglyphics; wrote rough to Birch; & then this, finishing by 11 1/2. I cannot wear a watch here at all, the sand gets into it so much; the silver one stopped altogether three times <each time set off again by picking sand out, with needle>, & only goes by lying quiet; the gold one I took into use, & looking into it two days after I found such a pinch of sand shaking about the works, that I emptied it & put it by again directly.

Thursday Jan 27. At breakfast told Ali I would go over to the hill 5 miles off in the desert which he reported full of tombs; & as I was late I handed him the bag, & told him he had better go on, & I would overtake him, as I should walk quicker. He smiled at this, & did not move for a

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few minutes, then dawdled about, & when he did start
 went down into the valley out of his way, & had a talk with
 a friend. So when I had finished I went over the hill
 into the wady the short way, & found myself ahead of him;
 so I went straight on at 5 miles an hour or so, never
 dropping below 4, up to the hill; making some detours to
 see the valleys on the way. By the time I got there, I could
 only see a speck of Ali, which I had to telescope to tell it from a
 stone. So I rambled all over the group of knolls of rock,
 which stand up weathered & worm-eaten by the sand, from
 a huge reef of limestone sticking up in the middle
 of the expanse of rolling flint & sand hills of the desert.
 After I had explored it all I found Ali come up. He
 dropped the bag saying he was tired; that I went like a
 train; that he had been trying to follow me, but I first
 went up the hill, & then back to the valley, & he could
 not manage it. I laughed & reminded him that I had
 warned him & given him a good start in time; on which
 he said no more. We then looked all over the place for
 the tombs, which now only were said to be wells, not
 rock chambers as I had understood; but though he searched
 & I searched not one could we find ^{he said he had only seen them by moonlight with Dixon & Grant, & there were 8 in the party}. So at last I returned
 to my bag, & sat down in the shade for dinner. It was a
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 see the force of this excuse.>. So at last I returned
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 lovely day; not a scrap of shade in sky or on ground

for walking, but an intense clear sunshine; a fine
 (118) north wind which baffled about East & West, gentle &
 not too strong, just kept one from streaming, & made
 walking delightful. After dinner we then returned I making
 various long detours, going back separate from Ali; seeing
 many remains of Bedouin camping grounds on the
 way. A stone or pebble displaced here remains unchanged
 for thousands of years probably, if not in a water course. I
 measured a tomb on that side of the Great Pyramid, &
 looked at the Ibis ~~read~~ chambers; but they were so
 intolerably batty that I felt poisoned, & backed
 out pretty soon. Then to supper. Ali had loaded
 himself on return with 34 lbs of silicified wood; I saw
 many small hills of nothing but silicified ostracods.
 After supper, copying hieroglyphics, wrote Dr Birch, &
 this; finishing by 12. I go to Cairo tomorrow to
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Cairo
 VII

Please post enclosed to Dr Birch, as address at end of letter.

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Ali has a knack of hiding the key of the door of his tomb (next to this) in the sand, ready for himself or Muhammed. Just now I heard him & friends grubbing for some time, & at last a cough at my door, which I opened to see M's laughing face asking if I had the key, I in return asked him where it was,

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I assured him I did not know, taking candle out to help the search. I think A. must have pocketed it, & forgot. ⁽¹²¹⁾ It seems the noisy shooter who comes round at night is the village guard whom Ali has bespoken to include Mohammed (& myself) in his rounds. Now it is 10 o'clock, & I really will go to bed at something like a proper hour for once. Many thanks to all kind writers at home; the weather is not such that I long to share it, & the accounts in Pub. Op. are equally unpleasant. Some of my figurey journals might as well go to S^r Hall, as I have not time to write to him any more than to many others. Every line I write is so much lost time from useful work to be done here; as I want so much sleep, that the whole of the dark is not too long for that & supper &c. I am much disappointed at finding that my wants in food & rest are quite as great as in England; I had hoped to be able to go with little of either.

Saturday 29th Jan 7. Off after breakfast to arrange for the station mark to be put on the rubbish N of Δ to form one triangle round it. After much examination found that another mark could not be shifted to accommodate it; so after some care fixed it; but it will require a plumb line from tripod stand to see it. Then put 2 marks on N steps to see pavement where easily cleared. About 20 carts came up today to carry stuff from Δ rubbish heaps to mend the road. I had some thought of persuading them to clear where I want; but as they only want chips & not the ordinary larger flakes they don't want to clear where I require

& assured him I did not know, taking candle out to help the search. I think A. must have pocketed it, & forgot. It seems the noisy shooter who comes round at night is the village guard whom Ali has bespoken to include Mohammed (& myself) in his rounds. Now it is 10 o'clock, & I really will go to bed at something like a proper hour for once. Many thanks to all kind writers at home; the weather is not such that I long to share it, & the accounts in Pub. Op. are equally unpleasant. Some of my figurey journals might as well go to S^r Hall, as I have not time to write to him any more than to many others. Every line I write is so much lost time from useful work to be done here; as I want so much sleep, that the whole of the dark is not too long for that & supper &c. I am much disappointed at finding that my wants in food & rest are quite as great as in England; I had hoped to be able to go with little of either.

Saturday 29th Jan^y.

Off after breakfast to arrange for the station mark to be put on the rubbish N of Δ to form one triangle round it. After much examination found that another mark could not be shifted to accommodate it; so after some care fixed it; but it will require a plumb line from tripod stand to see it. Then put 2 marks on N steps to see pavement where easily cleared. About 20 <20> carts came up today to carry stuff from Δ rubbish heaps to mend the road. I had some thought of persuading them to clear where I want; but as they only want chips & not the ordinary larger flakes they don't want to clear where I require

¹²²
 it; also it w^d be more trouble to them, as it w^d be on low level;
 & I should have to bakhsheech them & look after them; so as I
 must get permit (which I have no doubt of doing via Gen^l Stone)
 for many other clearings, I thought best not to try to guide
 them except to prevent anything I do not want. Of course
 Ali & I will keep a good look out for casing, but they do not
 want large stones & so will leave them; but I told Ali to offer
 a franc each for any pieces of three planes; they are so
 rare that I shall not have many, & Sidney Hall much
 wants some. Then put in new mark by Gills SW socket,
 which is destroyed; also mark over a likely point to find pavement.
 Then to the little Δ by the 3^d, climbed it & put mark on top, &
 found one of Gills bronze squares there, without any lines on it
 & therefore probably not used; so I left it ^{alone} as it was not in a good
 place for use. Then routed with Ali in 3rd Δ rubbish &
 found a prize of a corner of a corner-casing stone, 
 about 10 ins. along each edge, much decayed in parts, but
 with good surfaces remaining; bagged it & back to the
 Azimuth Trenches; ^{found some curious cuttings in the rock &} put stations on the N & S ones (requiring some
 clearing to find in parts) & on the trial passages. I still must
 mark the other two trenches, & then can begin & select still days
 for triangulation & I cannot now risk leaving it later, as it
 will be probably 10 days work, & this will spread over a month
 by selecting good days. Then by March I cannot reckon on
 its being cool enough, & free from sand, so as to use instruments.

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 by selecting good days. Then by March I cannot reckon on
 its being cool enough, & free from sand, so as to use instruments.

I think the triangulation I can do alone, but the levelling I must try to hook some European from Cairo to help in. I have hopes of Dr Sherrin when he comes down Nile in about a month. Perhaps ^{A.H.} Hooker would do it. To day it flashed on me that he is the Ayerst H. Hooker whom Spurrell told me of, & wrote his name for me in case I wanted to make acquaintances in Cairo; I must open up this next time I see him: there can be no doubt, as he is in chemical line.

Then back to supper & dinner; which lasted some hours slowly over Pub. Op. I am very glad that all papers are so against Dale & Euraght, specially Times; & Govt does not fare much better about Ireland.

Then looking over triangulation arrangements; writing list of places I want to clear, to give Genl Stone. I shall ~~try~~ not try ~~an~~ to get it done officially, as 1st I must fee any officials that come here to do it. 2nd They would delay probably, & drive me too late. 3rd They would not do it as I want, but too much here, & not enough there. 4th The expense of all I ask for now is not over abt £20 I expect, & I should have to give nearly as much in bakhshish to officials. ^{time when I came} 5th I should not have such control over them. 6th It wd be an obligation. Dr G. says that for Viceroy to lend a boat to take you up Nile is ruinous; it costs much more than taking a steamer ticket. I ask for all sockets of all Δ s to be cleared (3 of Δ^1 & 3 of Δ^2 are nearly clear now). Parts of paving cleared. Entrance passage cleared. Azimuth Trench ends cleared: & as secondary clearances, ground in centre of trenches, Rock trenches NE of Δ^1 ,

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Dr G. says that for Viceroy to lend a boat to take you up Nile is ruinous; it costs much more than taking a steamer ticket <or even a dahabiyeh>.

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124
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Then wrote this till $\frac{1}{4}$ to 1, & to bed.

Sunday 30 Jan 7 After breakfast, tidying up, & reading, I went out for a stroll about 3: & up to West Hill for sunset. This West Hill commands the whole Pyramid plateau, & is a large expanse of bare, windswept, sand polished, limestone, all of a green neutral tint. In parts of a cliffy nature, where it has been cut away, the sand has worn out the softer parts so that it looks exactly like as if it had been blown over by a hurricane when half melted. It is a special feature of sand-wear, that it is in lines, shewing the direction in which the wind usually blows over the rock. Then back round the N. face to see what the diggers have done. They are clearing away rubbish off Δ steps just one step above pavement on the W. end of N. side, which is not at all a bad place for me. The parts I exactly want are, for one reason or other, not what they like to work on, being inconvenient in one way or other, but they will be useful I think. One big corner of a tip joint of casing stone is turned up, but it is about 60 ^{or 80} lbs too much for me to take away I fear. It is a very low one, not at all browned, having been sanded up

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very early. Then to supper. Tomatoes as usual, eggs & chocolate of course, ship biscuit ad libitum. Ali had a long talk, not having seen him since morning; I leave him to himself on Sundays, & he takes good slices of other days; but I really seldom want him.

Monday 31 Jan 7 A windy day with much sand in the air, so observing was out of the question. Put in two station marks for the ENE trench; & then took advantage of wind to sift earth for beads, got a considerable quantity. Then off to hill beyond sphinx; looked at several tombs there, & sifted for more beads, getting ¹³ ~~10~~ feet of them in all; Ali knew the best places in that hill, which is all a mass of tombs like this, & the ground white with bones turned out. It was a miserable day to be out; clouds of stinging sand blown on one's face & into one's eyes continually; we have none such in England, the grains are so large that they seem to cut in hitting the face. Measured three considerable tombs. Came home in the dusk, with rather a headache from the strain of blinking the eyes, & with eyes & face sore with sand.

After supper arranging the order of observations in the triangulation, on which a great deal depends; putting them so that a shift of the instrument may be instantly detected, & minor shifts may not affect small districts but only produce errors on whole extent, as far as possible. Then wrote this at 12, & to bed. The Mecca Caravan returned ~~to~~ day.

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Tuesday 1st Feb^y

¹²⁶
 Tuesday 1st Feb^y Finished arranging order of obs^{ns} during breakfast.
 Not very windy, so determined to try
 triangulation: looked up all the apparatus, & had to make
 small plumb bob ($\frac{1}{4}$ inch high) to centre theodolite by, when not
 on stand. Off by abt $12\frac{1}{2}$, & fixed to do the middle of W side, as
 that sta did not require corners of Δ , & I found screw cap of
 N-W. immovable to pincers, needing the proper key, which I
 must get from Gen^l Stone. Tried spectacles but found them
 so much in the way, that they soon returned to my pocket.
 G Levelled & centred theod, adjusted collimation & examined
 other points; then went off to put up my plumb bob sign^{al},
 they are easy to place, even on a windy day like this, & with
 a stone about 1 lb weight on top, they stand pretty well; I
 only had to replace 2, & the wind was such as to blow the
 sand up occasionally, & by the time I had done the horizon
 was hazy with sand in the air. Then getting Ali to stand
 to shade me I took the azimuths. Then took dip to nearest
 5' or so, for any correction required, & packed up; went round
 & collected signals & home. The placing all the signals
 (which will involve 3 miles walk, beside climbing, & time of adjusting
 in some cases, and 1 mile or so at the least) is ~~one of~~ the most
 troublesome & tiresome business for one observer to have to
 do; & I must take them in every night for fear of stealing, &
 in any case I should have to go to them all ^{every morning} to see that no one
 had shifted them. I reckon 3 or 4 hours every day will be taken
 up in this. While returning Ali called me over to the rubbish

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 up in this. While returning Ali called me over to the rubbish

heap, just under Δ entrance; & there, oh joy!, was Howard
 Vyse's casing stone uncovered, by the carters in getting
 road material. They are working just where I want, both
 E. & W. in the cut of the heap under the entrance, & I look for
 casing stones on the other side; also they work on level of
 1st course, i.e. just over any casing, at near the N-W. corner.
 They are within 2 ft or so of pavement in the middle, &
 clearing away on that level. It is clearly a false report
 that the casing stones were broken up after H.V.'s leaving, & must
 have been said by some one who could not see them for
 rubbish, as on the side of this is EXCAVATED painted, just
 as H.V. painted on the air channel &c: So this is his first stone
 just another. I also write on this to Sydney Hall, enclosed for
 posting. After supper I reduced the dos of to day; & find that
 mean error of 1 pointing (4 rerⁿ readings) from all causes (except
 the error of levelling instr) is only 1.3", which is about $\frac{1}{12}$ to $\frac{1}{40}$ inch
 on ground, according to distance of stas. This is as near as I could
 hope or wish to come, & considering that it was a gusty day,
 & a very awkward place for theodolite, needing to rise & lie
 down continually, it is promising for the final results. There
 was no clear evidence of shift in azimuth, possibly $\frac{1}{2}$ ", not more,
 & as it was propped up at one foot with a scrap of stone, this was
 good. I go into Cairo tomorrow to see Genl Stone, get key of
 sta. marks, & order to clear the sockets if I can.

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 posting. After supper I reduced the dos of to day; & find that
 mean error of 1 pointing (4 rerⁿ readings) from all causes (except
 in errors of levelling &c. instr) is only 1.3 <40>, which is about 1/12
 to 1/40 inch

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 hope or wish to come, & considering that it was a gusty day,
 & a very awkward place for theodolite, needing to rise & lie
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(128)
I got letter from Wayman Dixon, very friendly & glad that I am here. Also from C.P.S. politely peculiar in his fashion, but saying that he will not trouble me "with any ^{thing} private", but that what he wants done, has been published for 12 years: i.e. base cleared, & he will not believe in anything ~~and~~ else, that is the English of it.

As to Stonehenge copies I think the paper with list of to be sent, with the sent dashed off it, is in the 3rd drawer from bottom of Bouell's chest, or 6th from top, if I remember them aright, along with all the other S.H. papers, which are along with my stock of plans.

Please send Antechamber measures back to S^r Hall when they come from St J.V.D., for him to keep till my return, as they are mainly done for his satisfaction.

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Cairo,
VIII-

Cairo
VIII-


(1)

Wednesday 2 Feb^r


Wednesday 2 Feb^r Off by 9 ½ to Cairo; went to Gen^l Stone's house (129)
 he was said to be at Kasr en Nil, so went there, but his room was
 locked up. Then up to Ezbekiyeh & Muski; ^{to post, no letters in} got some rice, & strolled
 about the city, for having come in early I had nothing to do till I saw
 D^r Grant after dinner. Then had dinner & lounged about till ¼ to 2
 then went to the D^r's; found him at dinner, & had a talk. He
 strongly says that it is best to ask no leave to uncover anything,
 but do all I want as quietly & quickly as possible, falling back
 on my permission to measure if anything is said. He was very
 glad to hear of the casing stones, but told me to keep it quiet, even
 in England; as the French are very jealous, & might interfere
 if any notice was attracted to me or these things at present.
 He had set Ali to dig some time ago for ^{the} casing, but unsuccessfully.
 Heard of a meeting of two companies yesterday, ^{at social & not political affair.}
 My boots were capitally mended. Then off to Gen^l Stone's house,
 found him in, & handed him the statement of Gill's stations
 & their present condition. He also tells me to do any uncovering
 I may want without any hesitation, as part of the measuring;
 & that if any objection should be raised he will write me a line
 to the Prefect of Police stating that I am only surveying; I can
 safely challenge them to say whether I am in the least likely
 to find anything in the places I shall clear. I shewed him
 the chain of which he much approved, & asked him about graphic
 reduction of triangulation. He says that they tried it for the
 Faium survey lately, but it was not approved & there was
 a strong feeling against it: I st spoke up for it, & he was

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quite ready to believe in it. He is not head of the survey now, &
 a Mr. Colvin has the post; but he said he would try that I
 should see a Mr. Mitchell? who is in the survey up in the
 Faium, & has had to do with the reduction, & have a talk
 with him: he comes in every Friday, or every other, & I shall
 be very curious to hear their mode of working graphically.
 Then set off home early by 3 1/4, & got in just after sunset.
 After lighting the stove I took my bag, & went up to fetch in
 a batch of stones I had left; I continually put heaps together
 here & there, to be cleared off whenever convenient; &
 Ali has caches on every side of the Pyramid. Beyond
 sundry basalt hammers & an old whetstone, my main haul
 was a bottom corner of a corner casing stone  from one of
 the little pyramids in black basalt, a substance hitherto
 unknown I believe in casing, & Ali had never seen any
 such before. The angles are close to 52°, & there seems
 no doubt on the matter. Ali brought in a ^{big top} ~~corner~~ big bottom
 corner of a casing stone 7 ins & 9 ins long from the angle, a large
 bottom corner of about 8 & 6 ins on the faces he secured also this
 morning: probably many more will turn up, but anything
 moveable he promptly brings down here for safety. I
 shall have an awful lot of "geological specimens" to clear
 at the Customs if this goes on; but I collect everything in
 here, & must sort much before I pack; a large corner I devoted
 to Gr^t Δ casing is full & overflowing, some 50^{or 60} pieces in it:

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 to Gr^t Δ casing is full & overflowing, some 50 <or 60> pieces in it:

& there are hosts of other things. I brought in to day a granite ⁽¹³¹⁾ boss which I found lying in a hole, just as it has been knocked off a large block, when the journey was over it was no longer wanted. It is 12 x 8 on the under fractured face, & 2 1/2 thick .

I hear the wind blowing high now (11.0 pm) which does not sound like surveying to morrow.

Thursday 3rd Febr After fully thinking over the matter, I have settled not to uncover 3rd Δ sockets at present, as that is a big job; & to put mark on course over 2nd Δ SE which is deep in sand, thus I shall only want G^t Δ NE clear, & this I intend to set the shekh here on, as a sweetener; it is less blackmailish to let him be exorbitant over a small job, than to pay him bakhsheesh for nothing. Then I intend afterwards, when the traveller's season is over, to set the Δ shekh to clear the entrance passage, & Omar simultaneously to do Δ^3 sockets; thus finding something for each, & preventing either from wishing to hinder or stop me from digging. As going into Cairo is worth £1 or so, in value of time here, & expenses; it is better worth while to waste a few pounds on the shekhs here in high charges, than to let them stir mischief which would hinder me, & require several journeys to Cairo probably at the best. So on going out I interviewed Shekh Abu Talib (the one who was impudent

& there are hosts of other things. I brought in to day a granite boss which I found lying in a hole, just as it has been knocked off a large block, when the journey was over & it was no longer wanted. It is 12 x 8 on the under fractured face, & 2 1/2 thick [R]. I hear the wind blowing high now (11.0 pm) which does not sound like surveying tomorrow.

Thursday 3rd Febr

After fully thinking over the matter, I have settled not to uncover the 3rd Δ sockets at present, as that is a big job; & to put marks on course over 2nd Δ SE which is deep in sand; thus I shall only want G^t Δ NE clear, & this I intend to set the shekh here on, as a sweetener; it is less blackmailish to let him be exorbitant over a small job, than to pay him bakhsheesh for nothing. Then I intend afterwards, when the traveller's season is over, to set the Δ shekh to clear the entrance passage, & Omar simultaneously to do Δ^3 sockets; thus finding something for each, & preventing either from wishing to hinder or stop me from digging. As going into Cairo is worth £1 or so, in value of time here, & expenses; it is better worth while to waste a few pounds on the shekhs here in high charges, than to let them stir mischief which would hinder me, & require several journeys to Cairo probably at the best. So on going out I interviewed Shekh Abu Talib (the one who was impudent

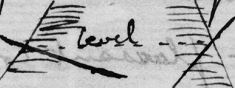

to Ali before) & Shekh Ibrahim also joined up immediately.
 I told him I had come to finish Mr Gill's work, as he had asked me
 to do; that he knew I had permission from the Acheneb Pasha
 Prefect of Police (for the police officer over here the other day told
 him that I had the letter, & that he was bound to see that no
 harm happened to me or mine), & that I now wanted
 Mr Gill's mark uncovered, & should probably want other
 things also afterwards. Abu Talib was remarkably subdued
 & polite & scarcely smiled, Ibrahim on the other hand tried to
 take the matter up by shaking hands, & assenting to
 everything I said; so I just paid him enough attention to
 leave the job not very clearly assigned to either of them,
 so as to make it a joint thing if possible. The talking over it
 was prodigious as I went up the Pyramid, & I expected
 to see it done soon, but not one of the lazy rascals of
 the guides would put their hands to work, & on looking
 at it in the evening not a stone was moved, though
 I could do it in a hour or two easily. They wait to
 get a fellah to do such a menial matter. I went up
 Δ, & by mistake past the place to turn for the air channel,
 so being near top went on & copied all graffiti ^(Names of travellers recorded on the stones) before 1700,
 not many, & none on the top itself. Then down, to North

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(2)

Channel mouth: ⁽¹²⁾ ~~has~~ selected a part of a stone visible from two stations below, smoothed it by scraping, & put on a vertical band of pencil, 1 inch high \times $\frac{1}{4}$ wide, to be seen from below easily in telescope; & a thinner cross line. Then hung plumb line beside it & measured off to passage mouth below, the distance of ~~passage~~ ^{channel} W of it, & ~~the~~ ^{the} depth of plane of floor vertically below the horizontal mark. Thus fixing that mark from below gives the exact place of passage on plan, & ~~the~~ a point in course of passage to fix it in a vertical section. It was blowing rather hard, & much sand haze in the air, which had decided me not to triangulate to day; so it was not pleasant crawling along the rotten & encumbered steps of the Pyramid. I decided on leaving the S. channel, but afterward thought I would try. It was too windy to go along the S face round to it, so we went up ~~on~~ the NE arsis, & down the SW, ^{both} which are kept clear by travellers passing; thence we crawled along to the S. channel, off often stopping & sitting down gripping the stone, which a gust tore by, sending showers of chips & dust flying about us. The mouth of the channel is quite clear; & dropping a stone in, it ~~fly~~ rolls along down for a very long way, so I shall pulse at the bottom to see if it is possibly to be cleared.


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(134)
 I put a similar mark on the channel, only on a block of the flooring still remaining, but shifted; having to sight a plumb line in plane of ^{each} side of channel, to measure distance of mark E of channel; also taking dip of mark below plane of channel by sighting.
 I think it important to fix these, as they probably embouched at exactly the same level ^{i.e. on same course}; & hence as one is at 45° & the other at 31° , assuming the Δ to be symmetrically built, they give the ~~the~~ position of casing face at a high point, & hence the exact angle of slope ~~level~~  all up the faces; otherwise we are quite ignorant of the thickness of casing above, & therefore of the ancient height & slope, as the Δ might be  having thinner casing above."

I also fully measured angle ($45^\circ 5' \pm 5'$) & dimensions (8.35-8.65 wide, 8.7-8.9 high) of hole, angles of it & form of stones about it. Then we went off to 2nd Δ & put station marks on three exposed socket floors; then to 3rd & put marks on nearest suitable steps to the ~~so~~ sockets, from which to sight down with small theodolite as they are cleared; ~~the~~ the wind had increased so that ~~all~~ the country gradually faded into absolute haze at $1\frac{1}{2}$ miles or so, & then it cleared off

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in the evening. We then went to SE of Δ^2 deep in sand, & put mark on step over it; then home to supper. I examined the 3rd Δ granite casing, which has been assumed to be all frightfully weathered (see Life & Work 1.257 "the round pebbles"), & I clearly see that it has never been finished in parts; for it is thus  with a great bulb rising 6 or 8 inches above the face, all intended to be dressed down to the dotted line, but only done so in parts. No weathering could make 8 inches of solid granite where it did not exist before. All the really finished surfaces of the outside are in fairly good state, perhaps .1 or .2 gone by scaling. I also saw on bulbous unfinished faces two bosses in displaced stones, beside the one in situ which I mentioned before.

After supper, writing this, &c; & to bed by abt 10 1/2 for a wonder < alas 11 1/2! -> We looked over the carters' digging in the evening. They are taking stones also to build a wall, & took two pieces of casing which Ali had picked out; so we must look out; I have however as much, or more, than I can think of carrying off. They have uncovered farther along Vyse's casing stone, & also farther in other directions. Ali quite puzzled me today, while at work with one foot stuck out, by asking if I had an "angle"; but he explained he meant a "vather's bluther".

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Friday 4th Feb

Friday ⁽¹³⁶⁾ 4th Feb Very windy, & though not sandy in morning, I could not see more than a mile about 1 o'clock it came on so thick. Went up & found about half of the socket uncovered, only about 9 ins deep in sand & stones: Abu Talib was very polite & staid as before, but asked that most uncomfortable price "anything you please"; & he & all, preferred talking through Ali in Arabic, rather than to me in English, though Ali said before them all "they can all talk English well as me". He also said he would leave it till I had more done; but I told him I might not have more for some time & preferred to settle now, so gave him 2 fr, which was probably 3 times the true value of the work at least, wherewith he was very well satisfied. I intend for heavy jobs to try contract as Gill & Inglis both did; they are accustomed to the idea. Then went to the N. face & found a man smashing up unwieldy pieces of casing stone with a big hammer, close to Vyse's; I shuddered, & Ali immediately went up & told the old Arab who has the contract for the job, that he must take care that no harm happened to them. He was frightened Ali said afterwards at my inspecting his works so closely, as he feared I was going to forbid his quarrying there; but it suits me admirably. ~~The~~ About half of Vyse's second casing stone is now cleared. I paid ^{2. each} 1/4 for two good

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(3)

pieces of casing joint; & the men finding such a silver mine
 open before them, brought up all sorts of bits, with faces &
 without; but Ali & I explained that we wanted pieces
 not square, & with a red side. They are sure to look
 after them now, but several big pieces of joint are gone to build
 the wall. One piece I got is a corner of a corner stone, but without
 any arris . I then went & looked well over the
 excavations in the 2nd Δ temple, intending to plan it; but
 rain threatened, so I made off to the tombs, & spent the day
 measuring a dozen of them. Ali turned up a little scarab
 covered with gold foil, (worth perhaps 3s or 4s intrinsic) in the earth
 thrown out of one tomb; he pressed me to have it, but I
 insisted on his keeping it; I go on the plan of taking all I
 want of his finds, when out with me, but leaving him
 anything I do not require. As my wants are mainly pieces
 of casing, & big basalt hammers, &c, he is agreeable to the
 arrangement. It rained smartly twice, & again just as
 I got home. I lugged down a piece of casing of 30 lbs or so, &
 last night Ali ~~to~~ sent Muhammed to heave down a bigger
 piece into a hole halfway here, out of the way of the carters,
 so as to be at hand in case there are enquiries for such from
 England. After supper wrote this, & copied ^{the rest} down of Ali's testimonials.
 Then after my usual nightcap of dates & oranges to bed by 10 1/2.

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Saturday 15 5 Feb

Saturday 15 Feb A fine day with not too much wind;
 so ¹³⁸ took up theodolite to station on 2nd Pyramid temple; levelled
 it, & left Ali to shade it, while I put up ~~slab~~ signals. This last
 took about 3 hours brisk, & at last I began observing. I
 had most provokingly to leave a few observations undone, as
 it began to get dark after doing 39 complete obs^{ns} of 4 readings
 each, in about 3½ hrs. My time is all guesswork, as I am
 obliged to leave my watch at home, for fear of stopping it
 altogether with sand. Then took altitudes of a few points, &
 excentricity of theodolite; for I find it would be a very long job
 to get it centred to $\frac{1}{100}$ inch as well as levelled; the levelling screws
 shift it in turning, perhaps I can avoid this by using sheet lead
 instead of standing them direct on the stone, but excentricity
 is very little complication in graphic reduction, & so I do
 not mind having it. In practical use I do not like the signals
 of plate glass, wire frame, & vertical wire, 1st Glass is likely to get
 broken, particularly as it glides off if put on ~~stones~~ not level.
 2nd It is heavy & bulky, & the wires cumbersome. 3rd It is liable
 to unperceived derangements A, of level used. B, of wire not
 straight. C, of bending wire frame, this last very difficult to
 detect. The plumb bob signals on the other hand cannot have
 unnoticed errors, & are not troublesome to centre. Then,
 after packing instrument, went off in slight moonlight to
 get in my signals. This is a disgusting affair to spend half ones
 time or more, on waste work; if I could trust anyone to
 centre ^{some of} them, it would enable me to do so much more;

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& a writer to take observations (or better some one to read the
 micros, to avoid getting up & down, & going gently round
 theod^l every time), would be a great assistance. But I
 do not expect that I could get anyone accurate enough in
 Cairo to help. In about an hour I had got in all my
 signals, except two very out of way ones; but it was bad
 work stumbling & slipping my ankles on the endless
 heaps of rubbish in the faint light, & climbing to the top of one
 of the small pyramids & half up another. Ali meanwhile
 brought the boxes down, & I got in by 7; & had some supper-
 dinner by 7½, for I had not stopped to eat anything all day
 since breakfast. Then after supper reduced all the
 micro readings, & took means ready for reduction of triangles.
 Then wrote this, & to bed abt 11½. The average probable error
 of a complete observation today was 1".0/4.

Sunday 6th Feb^r Had a good long sleep after yesterday's work;
 then after breakfast & reading strolled round the N. side
 to see what the carters were doing. Vyse's stones are not
 farther uncovered, they are working a little way from the
 face of them along the base line. ^{also at a low level 3 ft or so overhanging on N.W.} A quantity of bits were brought
 to me, but I pointed out that nearly all were square, & no
 good: the workmen, like the officials, are a merry pack if you
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 each stone not being what I wanted, & pointed out the deficiency to those who stood by, there was generally a laugh over each failure, which was pretty often joined in by the exhibitor. I got one piece of bottom join, & one bottom corner. There are four whole casing stones (displaced) lying in the rubbish, i.e. with top, bottom, & face, more or less chipped; & I agreed ^{this evening} with Ali to try & preserve them from being broken up, by speaking to the reis, & marking them with charcoal; as there are plenty of other stones, I hope this may succeed in keeping them for general inspection of those who may wish to see such; for I shall throw down the rubbish cliff over Vyse's before I leave, as otherwise they may be carried off for Arab buildings. I do not want to put them in official care as that is worthless, & might be much in my way in working.

I then went round by the Sphinx & granite temple, & b/<o>ver the side of the desert by the 3rd Δ sitting & enjoying the view leisurely, which is more than I ever do in ordinary. It is the finest point to see the hill; everything, all 9 Pyramids, both temples, Sphinx, granite temple, big tomb on cliff, trees, stratified cliff, causeways, & enclosures around the Pyramids, are all visible; the only defect being that the 3rd Δ has undue prominence from being the nearest. Then back in twilight, with brilliant orange & crimson clouds overhead, which made the desert glow, & shone across the green valley of the Nile to the purple lighted cliffs of Mokattam & Turra, & the distance beyond Helwan, fading into blue. After supper to bed abt 10, in hopes of a long day tomorrow.

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(4)

Monday 7th Feb

Off by 7.45 with Ali to station on hill top

W. of Pyramids, placing signals on the way there. Then began observing; but the wind was so high that three times I had to leave off, & take a run of $\frac{1}{4}$ to $\frac{1}{2}$ mile & back to replace signals blown over; also it kept the theod. in a shiver, so that I had to steady telescope & micros by hand in order to see anything; and it was dull & cloudy so that I had not enough light on the distant ones; to add to which a gust continually came driving sand into ones eyes, & making one screw them up for a minute before anything could be seen again. However having no sun I was free from tremor of the air, & expansion of instrument. I pegged away at the work, & on reduction find it better than previous days, only 1.0 mean error of one obsⁿ, after allowing for a shift of 4.6 in azimuth at one point. Then had biscuits & dates about 2 $\frac{1}{2}$, & then moved over to another station on a small Δ by Δ^3 . Ali had vanished for sometime (as I after found taken up by a traveller who knew him) so I had to go ϕ / \langle to \rangle & fro moving things; the theod. of 36 lbs was a lug to carry $\frac{1}{3}$ mile, & then up a slope of rubbish. H/ \langle Th \rangle ence I took azimuth to 5 stations, \langle the wind gone down then \rangle

& then just finished by sunset, packed up; & then went round & collected signals; getting in by 6 $\frac{1}{2}$. After supper reduced all observations, & then wrote this, & to bed about 11.0.

Tuesday 8th Feb

Not up very early after yesterday. Went up with Ali intending to give the other shekh a job of having stones moved, but he was in Cairo, so left it. Looked over digging on N. Face; could not

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 (142) numbered the others, & two large pieces of corner, with charcoal
 the giving injunction that they were not to be broken up.
 The digging goes on very satisfactorily to me; one or two
 more such pulls at the heap, & there would be a clearance
 of the W-part of it nearly all through. Then back & get
 instrument boxes; I went off guide, it being $11\frac{1}{2}$, & had
 to be up, at the S. air channel by noon; I got up from Vyse's
 hole, & going down to the SW corner; up to channel level (270 ft) &
 crawled along the rotten face, in 10 minutes; found I was
 in good time, & (as I had calc^d from dip of passage) the sun
 shone right down it to day. Took telescope up with me &
 examined it; it expands somewhat at one or two blocks from
 present end, & is better worked; it turns about $\frac{1}{2}$ its breadth
 to the E. at the farthest point clear, which is about
 80 ft from mouth judging by the focus of the telescope. I
 forgot to take weight & string to measure it. Then down
 again; but the quantity rather than intensity of the heat was
 not nice on the middle of a S. face with the sun full on it at
 noon, & I was not exactly comfortable. ^{dizzy} I then put up my
 signals, & took azimuths around station at Vyse's hole (mid.
 S. side). The level was queer with the radiation from hot stone
 I think, & fluctuated; so that it was awkward; & then, just as I
 had begun, the umbrella fell blew down & knocked the
 telescope, so I had to relevel. At last I got it all done, &

see anything of two of the casing stones I saw before; but
 numbered the others, & two large pieces of corner, with charcoal,
 Ali giving injunctions that they were not to be broken up.
 The digging goes on very satisfactorily to me; one or two
 more such pulls at the heap, & there would be a clearance
 of the W-part of it nearly all through. Then back & got
 instrument boxes; I went off guide, it being $11\frac{1}{2}$, & I wanted
 to be up, at the S. air channel by noon; I got up from Vyse's
 hole, <going> down to the SW corner; up to channel level (270 ft) &
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 I think, & fluctuated; so that it was awkward; & then, just as I
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 telescope, so I had to relevel. At last I got it all done, &

finished by twilight; getting in my signals by moonlight as usual. I left 3 rather out of the way ones up for tomorrow, & hope they will not be stolen. Then back to supper. Ali brought up my letters, which Muhammed had got to day in Cairo. Many thanks for them all, & Pub. Op. I am glad that I am in Egypt this winter, it is a horrible mess in England. After supper reduced obs^{ns}, & wrote this, finishing abt 11 1/2, a

finished by twilight; getting in my signals by moonlight as usual. I left 3 rather out of the way ones up for tomorrow, & hope they will not be stolen. Then back & to supper. Ali brought up my letters, which Muhammed had got to day in Cairo. Many thanks for them all, & Pub. Op. I am glad that I am in Egypt this winter, it is a horrible mess in England.

After supper reduced obs^{ns}, & wrote this, finishing abt 11 1/2, a bad look out for work tomorrow. Mean error today 1."6

Smyne turned up this morn, to get specimens from Ali for his present employer. I gave him coffee, & shewed him the paraffin stove.

Wednesday 9th Feb

had look out for work tomorrow. Mean error today 1."6
Smyne turned up this morn to get specimens from Ali for his present employer. I gave him coffee, & shewed him the paraffin stove.
Wednesday 9th Feb Off with instruments to station on 3rd Δ temple; found 2 of my 3 signals left out had blown down, & the third had to alter; so leaving them out, only saved collecting last night. After putting up all signals, set up theod, & then took azimuths till sunset, then rough altitudes & packed up; took in several signals, but left 5 out as a trial. The risk is of Bedawin finding them, when out feeding their camels in the neighbourhood. Then home to supper. I was rather dubious what to have, so Ali took the idea that I had nothing suitable; & after saying good night, sent up very kindly a basin of stewed rice with sugar. I began on it, but soon had to stop, & drain off the sea of butter swimming on it; after that it was very bearable. Then reducing obs. (partly before supper also); but all the dogs around made such an incessant row that I could hardly get on, & had a headache; also

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(144)
I was listening to catch a mouse in a biscuit tin, as I had done twice before; at last it went in, but the box tipped & I tried to grab it by hand, but it got off: hope the fright will scare it off. Finished by 10½ & to bed.

Thursday 10 Feb^r A very windy day, with sand haze; so I did not attempt surveying; went up to the N. face, & hunted over the diggings: two good pieces I had marked are gone; I marked some more, in hopes of possibly preserving them. The men brought a quantity of pieces, but only one good bit, a corner perfectly sharp. I measured the angles of all the pieces lying about, for fear they should disappear; & also approximately the angle of stones in situ, in case they should in any way be covered again. I wait to do them with the big steel square, & dig for pavement, till all the men are gone, & their work done. The mean inclination was $51^{\circ}49' \pm 1\frac{1}{4}'$ with average difference $3\frac{1}{2}'$, which is quite as close as the roughened face of the stone would be likely to give, with only a 10 inch goniometer, & as near as readings on a protractor of 6 ins diameter could be expected to come. I also levelled the top surface of the casing in 4 parts; it is beautifully true; the level base being only $6\frac{1}{2}$ ins long, the error of level varied from $2\frac{1}{2}'$ one way to $4'$ the other, in in & out; & from $\frac{1}{2}'$ to $5'$ from E to W. The mean of all being $2'21'' = \text{less than } \frac{1}{200}$ inch on the length of the level. Then I went & took angles of slope of nearly all the good tombs, for a quantity of 2nd Δ casing fallen, & found one block in situ within 20 feet of a socket, giving a fine fixing of the true plane. Then measured angles of 3rd Δ casing

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(5)

both fallen & in situ ⁽⁵⁾. By this time it was dark; so back to supper. After which not having much writing of obs^{ns} to do, wrote to Mrs B. To bed abt 11 1/2. A roar of wind sounded not long ago, so fierce that I went to the door & saw in the cloudy moonlight a whirl of white dust & sand from earth to sky travelling across the plain, about 500 feet across. The sound was astounding, & I should think the trees of the avenue must have suffered. It is strange how much noise the wind makes on the steps of the Pyramid; quite a howl when a blast comes past.

Friday 11 Feb. A very windy day, worse than before; the fierce gusts that almost blow one over, charged with small shot of sand are very nasty. I went up & looked well all over the excavations; they are doing better still, & clearing the pavement now by the casing stones; if I directed them myself I could not better arrange the work of half of them at least. They have cut at both sides of the heap W. of the entrance until it is merely a ridge at the tip, running down at the angle of rest on each side. I expect to see some casing at the W cutting soon if they go on. They are also driving a trench along pavement level nearly, in the work W. of the heap. It is really beautiful, if they only would not carry off the good casing which I marked; but there is more than I can possibly want. I got some good bits, a very nice top, & a bottom, corners, beside joints.

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Then Ali having gone off for his devotions at the mosque
 (being Friday) I lugged the bag of bits down home; & then
 went over to the tombs by 2nd Δ. I stopped on the way at
 the little Δs by the Δ¹, & picked out a lot of casing joints
 from the rubbish, some corners. Then went on planning
 the tombs; one was too deep to get into, the doorway having
 been fitted with a door ^{by the sherif}, & the place used as a resort of
 dervishes, I got in at a broken ventilator; so I went
 back for a rope ladder, picked up Ali & went in; it was a
 most interesting tomb with the casing half stripped out,
 shewing its arrangement capitally. The evening was
 beautiful; crimson clouds in the East, rosy in zenith, & on
 one side a smoky mass lit up tawny by the setting sun &
 raining in black streaks across the blue sky & crimson
 of the East, with a rain bow (double) on its black side; the
 whole mass of that filmy, misty, translucent cloudiness
 which the sun half shines through. After supper I wrote to
 Miss Marston & Spurrell, which I enclose; & please post.
 A man brought up a letter from Dr G., which a fodder
 carrier had brought out from Cairo, saying that Prof.
 Lewis & Mr Chester & perhaps Dr G. go to Tel el Yahoudieh
 tomorrow, & inviting me to join them; so I ordered my
 donkey, & shall be off about 8 1/2; posting this & doing
 some shopping. I hope you will approve of the varied style of my
 last circular level the other day; it may turn up, but I much wish
 for another.

Cairo, IX-

Then Ali having gone off for his devotions at the mosque
 (being Friday) I lugged the bag of bits down home; & then
 went over to the tombs by 2nd Δ. I stopped on the way at
 the little Δs by the Δ¹, & picked out a lot of casing joints
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 donkey, & shall be off about 8 1/2; posting this & doing
 some shopping. I hope you will approve of the varied style of my
 correspondence.

I lost circular level the other day; it may turn up, but I much wish
 for another.

Cairo, IX-

Saturday 12 Feb^y

(147)
 Saturday 12 Feb^y The donkey did not come round here
 till ^{nearly} 9.10 by my watch (which I knew was somewhat slow) instead
 of 8.30 as I ordered. I started, & went usual pace to Cairo,
 straight to station supposing I was in good time. Seeing
 nothing stirring I asked one of the officials & was told the train had
 gone 8 minutes, & found I was 20 min slow, though only
 supposing 8 or 10 min: so that I really started an hour later than
 I intended. Finding I could do nothing I went also to post
 got letter, & posted mine, & then to Dr G.; found him just
 alighting, & saying that he was occupied too late to catch
 train himself; so, after a few words, he asked me to lunch,
 & I went off to do shopping. Got cheese, sugar, chocolate, & matches,
 & back to the Dr^s. Found Mrs G. expecting some friends from
 Sheppard's Hotel; after a time they came, Mr Melville a young
 officer from India, who escorted an uncle of his home from India
 as far as Cairo, where he died, - consumption. A Miss Hayes & a
 little girl had come from England to see the said uncle, before his
 death at Cairo. They were very far astray in antiquities, but
 pleasant enough in a general way. Had another look over the Dr^s
 museum with them, he has a fine collection certainly, & adds to it
 nearly every day. I should think he must be running on at about
 £50 a year, perhaps more, in that line. Then about 3 I started
 back, getting oranges on the way. After supper I ran up ^{in bright full moonlight} to the
 Pyramid to see what had been done; some carting from E face,
 but nothing important. Looking over papers, &c. To bed about 11.

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 till <nearly> 9.10 by my watch (which I knew was somewhat slow)
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Sunday 13 Feb^y

Sunday 13 Feb^y. Very tired & sleepy after my ride yesterday,
 for Ali having I find purchased the donkey for 5 Nap^s (probably
 one choosing to reimburse a good deal of it from my payments)
 has also got a new saddle, which sadly wants working into
 softness; & now 24 hrs after I am reminded of its effects. After
 breakfast & reading I strolled out, picking up sundry odd & ends
 in my way; went round to the 3rd Δ, & observed what I
 had before suspected, that the highest remains of the granite
 casing on each face (the stump backs of one or two blocks) is
 at exactly the same course ~~at~~ on all sides; which very
 strongly suggests that that is the highest course to which it
 extended. Then round home, picking some of the desert
 hyacinths on the way; they are light clove-brown, although
 without smell when picked, I observed a faint hyacinth odour on
 looking at them in the evening. I am gradually making up a
 collection of desert plants. After depositing sundry specimens,
 I went out again for a look at the rubbish heaps; nothing
 more has been done on the N face, & only a cart or two
 has been at work on the E face, the job being nearly complete.
 I picked up a few pieces of casing joint, one good corner, & another
 poorer. Then secured a heap of miscellaneous which I had
 piled up on first going out, & back to supper. Ali came in
 & had a long chat. The Shekh has ^{made} ~~set~~ a man clear out all the rest
 of NE socket; just as well, for I did not order it, only told him
 I should want it bye & bye, & it shews they wish to help & get

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 I should want it bye & bye, & it shews they wish to help & get

some stray cash. Ali explained the regulations of the community. Any traveller ^{for anything the shekh may get from me/} paying the regular fees to the shekh, ⁽¹⁴⁹⁾ the money is divided, $\frac{1}{4}$ to the shekhs, & the rest equally among all the Arabs. Then, if by pestering, the guides can get extra bakhshesh, that is divided among the guides "family"; not family of relationship, but family of guides, they forming brotherhoods of about 4 each, who equally divide the surplus spoils which any of them get. And a social regulation is that the guides to a party must be taken out of different "families", or comradeships, so that extra bakhshesh may not fall too much into one party's hands. This is all far more complex & communistic than I had imagined; & I rather think hardly anyone ~~outside~~ Frank knows of it; I know the Grants, who know more than most people, are quite in the dark about it. To bed about 11.


Monday 14th Feb^r Windy & sandy, no surveying practicable. Went up & began looking at NE socket, when Mr. Chester, a Mr. Brown, & two lads appeared; he settled about the latter going up Δ , & then turning round he met me. He was very pleasant as before; & after going a little way my mention of having stone implements &c brought him down to my tomb, with Mr. B. They were much amused at the arrangements, I shewed him what I had got, & he said Franks at B.M. would be very glad of some of them. He admired my batch of Ptolemys, & got some more of Ali. Mr. B. also having some; & they chattered over lots of scarabaei

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with various dealers. Mr B. was rather at sea in antiquities, ¹⁵⁰imagining the stone scarabs inscriptions & all were fossil beetles!! Then they went off, Mr C pressing me to come & see him in London, close to B.M. I went up & ~~was~~ measured socket; putting a cross scratched near each corner, & measuring distances & diagonals of the rectangle ^{thus formed}, one point being Gill's station; as I have not got key to unscrew caps of his 3 capped station marks, I adopt the turning centre hole of the cap; this must be concentric with the screw, & therefore with the ring round sta. mark; hence it is independant of cap, & cross lines on platinum inside, are probably not $\frac{1}{50}$ inch out of the centre. If I loosened the caps they would probably be stolen. On calculating the check diagonal from the other measures, in even, it only differs $\frac{1}{100}$ inch, & I only measured to .01; hence it is very satisfactory; & as it is absurd to measure socket nearer than $\frac{1}{10}$ in; this is abundantly accurate. Then stretching a silk thread on the measuring rod by a knob of wax at each end, thus,  I had a truly straight line stretched quite free ^{top view} with the measure to define the position of offsets along the side; then setting this so that the thread passed vertically over two of the corner marks (+5 or Gill's station) I took offsets along the side. This was specially necessary as the outer corner of the socket has no definition for 8 or 10 ins along each side, passing over a very fissured & cracked piece of rock, which has never been dressed down to socket floor level in the corner; hence the trend of the sides is all one can go by. The so called cut off in the inner corner, is really 3 blocks of stone inserted, very roughly

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top view

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