tout again all 10's to 72. I rest in touch, trying photo of two inch styp, which should need 2003 see blate with a new To safrance, have there exposures on a help cloudy des Domeal) + writing the has been cleaning both suds of N. trunch (agalt) on S. E. Sech Apany on W, NE herman new hu it is the one all loss hattery July witten ; the la NTO AEMAIOS un not in hatter bottom store may get more ofit perhaps, * (to DIBC) in myst use c Ishould be inclined to puber to bim

2)

out again abt 10 ½ to 12. A rest in tomb, trying photo of two plates with a new 1/16 inch stop, which should need 2 or 3 secs exposure. Tried these exposures on a half cloudy distance. [10] Then out about 2, till 5 ½; when returned with men, & sat down to supper (or second-meal) & writing this.

The work to day has been clearing both ends of N. trench. Delimiting pavement (basalt) on S E. side. Searching fruitlessly for limit of Δ paving on W, NE, & E. Finishing hole on E side Δ^1 to rock; beginning new hole on mid of face. Clearing parts of NNE trench. Enlarging hole on S. face Δ^1 , which is very troublesome as most of it is through rubbish disturbed a few years ago, & therefore all loose & running. <u>Old</u> Δ rubbish may be left for many years in an overhanging cliff without falling. On this side a piece of inscribed casing was found; the largest piece yet known, as only single letters have been hitherto seen. It reads [\Re] – This is probably a name because

- this is almost certainly CWTHP,

This is a later name MAPKOC probably.

Now in top line is an O in the name; this is very rare in Roman names, & not one of the Roman Emperors will fit to I I O. But the second I is a long way from the O, & therefore probably T; & if we have I T O it looks much like <u>IITO</u> Λ EMAIO Σ but I do not think that the round Σ (C) was used so early as Ptolemy Soter, & it is [\Re] & not [\Re], by the bottom stroke [\Re] not [\Re]. I only hope we may get more of it perhaps, & unless Ptolemy <Soter> VIII (to 81 BC) did not yet use C, I should be inclined to put it to him.

On the Wiside paring was atlast forms, I casing insites aponit, but much decayed; I went down the (13 ft day) with laber (esthe sides were too bore to beer clambering) & Examined the stores well as far as uncovered, & satisfied upself that they were caring. Then I order a them to clo a good deal more stuff, to as to ancover albug the mover the faces of the stones yun Attrough "very nice" to bee mony xture better spent on other shafts; Espe the stones seen so becage that the angle could not be well measured . To extend the catty for on any side would t you not duper norman . Incarno alignment ofthe stones (by pland him, sighting, hild sing rods vertical, re;) this them 33 ins (say ± 3) wetting the hive that that set out from the 20 het for theod. ou the mounts. This it agrees woughly with N. sale in to I was also carried one in the chamber alignment. Clearing by Di; having cleared tent up a good bit of the flow, stipped that , of set them to clear out the sand to welling or so ofthe floor I then I inter to go up there for a day or two after they are done with a large forty kelen out floors when daw by to look after things . It is a tance with To step & 3 seconds Experience The plato of brightigs very good, & appears very slightly better than with 2 sees; hence) suppose they to be about the night thing . The good ada and a minute diffing in is that while focused on the distance the excerning some in sharp to soo inde on the plate (i.e. from full dank to full light, including invariation) through only 6ft distant; hence , practically over come the riffinity of all the field who being in forms abonce; & with these instantaneous plates, it is far casier

On the W. side paving was at last found, & casing in situ upon it, but much decayed; I went down the hole (1.3 ft deep) with ladder (as the sides were too loose to bear clambering) & examined the stones well as far as uncovered, & satisfied myself that they were casing. Then I ordered them to clear away a good deal more stuff, so as to uncover along the foot of the stones; to uncover <all> the faces of the stones would cost over 1/- a foot run, & though "very nice" to see, I think the money & time better spent on other shafts; especially as the stones seem so decayed that the angle could not probably be well measured. To extend the cutting far on any side would run into deeper mounds. I measured roughly the alignment of the stones (by plumb line, sighting, holding rods vertical, &c,) & find them 33 ins (say \pm 3) within the line that I had set out from the sockets by theod. over the mounds. Thus it agrees roughly with N. side in its alignment. Clearing was also carried on in the chambers by Δ^2 ; having cleared & cut up a good bit of this floor, I stopped that, & set them to clear out the sand to within 1½ ft or so of the floor, & then I intend to go up there for a day or two after other things are done with a large party & clear out floors when I am by to look after things. It is a print that interests me very much!

The photo of bright distance with 1/16 <inch> stop & 3 seconds exposure is very good, & appears <u>very slightly</u> better than with 2 secs; hence I suppose this to be about the right thing. The great advantage of such a minute diaphragm is that while focused on the distance, the edge of my doorway is sharp to 1/500 inch on the plate (i.e. from full dark to full light, including irradiation) though only 6ft distant; hence I practically over come the difficulty of all the field not being in focus at once; & with these instantaneous plates, it is far easier

to safere mightly with 3 seas on so than with taking the cafe of aplacing it in to see . So, for all but moving objects, they small ture is best apparently. The total have of destant the for uch which of was a most low with neft the v ly all Infting gleans. + at In a brown in son An shone beneath all the heavy cloud over the vellag mint the 200 I them bright go en surround , which showe for Mulkattan & mora sphor a mich " comson brown, picked out ith heavy shadow. Hushed out traw a law , with is glean your cam on the broad waters of the Saw something on the diale I took the tele this morgane, wette it needlachte on the noon's moon rose his light on the yellow ters was br monlight-orwate It became the have been and bast. - +2 ogs al 1025112 ast 7: tog, then a

to expose rightly with 3 secs or so, than with taking the cap off & replacing it in ¹/₄ sec. So for all but moving objects, this small aperture is best apparently. The total haze of distant objects from full dark to full light is 1/800 or 1/1000 of an inch which of course means that much smaller details than this are visible as traces. <I cannot perceive any haze or distortion suggestive of the aperture being too small.> Wrote this up, & to bed about 10. It was a most lovely afternoon, cloudy with rifts lighting the valley all over with drifting gleams; & at sunset a bright crimson glow shone, beneath all the heavy cloud over head, onto the villages with their bright green surroundings in the midst of the water, & the cliffs of Mokattam & Turra opposite, which shone with a rich crimson-brown, picked out with heavy shadows. But after I had done supper I looked out & saw a tawny orange ball of the moon just rising over Cairo, with its gleaming reflection shining on the broad waters of the Nile between; thinking I saw something on the disk, I took the telescope, & then I saw Mehemet Ali's mosque, with its needle-like minarets all displayed on the moon's disc as it rose; $[\mathcal{R}]$ it was a wonderfully curious sight. As the moon rose higher, the broad sheen of its yellow light on the waters was brighter & brighter, until it became the usual moonlight-over-water scene which I have been admiring every night for some time past.

Wednesday Nov 9

15 men & 2 boys again. Out directly before breakfast, 7 ½ to 9. Then again 10 ½ to 11 ½. Then again at 1 ½, & measuring steps of Δ^1 at NE corner; counting from 36 up to 100. Then round men before sunset. Home then, supper, adding up step heights, writing this, & to bed abt 9.% <10>. The method I adopt for course heights is with vertical staff held, & a horizontal staff

at our End on the steps when aboth other the horizontal having a course level fixed to restro, then roughly mad of height the mead hight of next step, step matum : this the alternate stips are all es: Atta intermedia 1 possible tranother pour no tavoid a becay a stip. Atommy 10th step I score a cross tishen 1 stips most when Hence on 200 steps or 100 pairs than usid a rod L The serves to 50th (true) & 100 (true) corrected mgh Le Para (fest) 707.1 1703 3065 Charing in wer and of Notrach, Charm hart I NNE truck the onter sud goes under the keaste ground, Is found; but the inner sud we tread by sinking might up tithe former sige of the basalt paving undomath the heals Morhan stores marked by cip. s. It narrows from &1 us at

resting at one end on the step, & held at the other to the vertical; the horizontal having a course level fixed to it, shewing just about 1/10 inch rise at one end. Then one complete link of the measurement is to set the vertical staff <(holding it vertical by the horizontal)> on the spot where the end of the level rod had <previously> rested, then roughly read off height of one step, & then more carefully read height of next step, reversing <level> rod, & taking mean of readings to avoid level error, & get two observations: thus the alternate steps are accurately determined for cumulative values; & the inter-mediate less carefully done, merely for their own sakes. I always go on from the same points of the stone if possible, or else level along to another point, in order to avoid a decayed step. At every 10th step I score across to shew what part was observed, in order to check by theod. levelling afterwards. I suppose that my p prob. error is not 1/10 inch on a pair of steps, most likely 1/20. Hence on 200 steps, or 100 pairs, it ought to be only $\frac{1}{2}$ inch. This is <a> far more accurate way than the French or C.P.S., as they only used a rod with slider I believe, & the steps are so encumbered that it is difficult to get near the faces of them; $[\Re]$ Hence it would be most likely that they the

previous measurers would be too short.

The sums to 50th (true) & to 100th (true) corrected for zero errors are

	mine	Gonard	Le Pere (best)	C.P.S.	Inglis
49^{th}	1679.0	1660	1676	1666	1682
50^{th}	1707.1	1689	1703	1694	
100^{th}	3072.1	3057	3065	3066	

I hope to do this up every corner to top; & check each 10th course by levelling.

The work done to day is clearing inner end of N. trench. Clearing parts of NNE trench; the outer end goes under the kiosk ground, & so cannot be found; but the inner end we traced by sinking holes right up to the former edge of the basalt paving, underneath the heap of broken stones marked by C.P.S. It narrows $2/\langle 4 \rangle 1$ ins at

it outer and to 39 + 30, then afthe heads it is will stones; them S. Atta heal it 4 8,7. + final 4 in dul , dant into built stores stone What use in such took it witho ould it alon would see in it a very nice the water when the begalt pavement was swilled town clean in whatever temple rebuilding it was situated. Serafs of polished dork gry grante were found (V in net frank, A this truch how will soarteb essing the over, sind Elimit Ithe tasalt paving - or rather the rock within that suce held it-was trached farther of the roch cutting for the proment Jon Atta http As incourd close tot. on A Efra, hale in the mil. - face was continued; on S EtW) was finished toroch el ; Va fresh hole begun in mid. Afree, " is the loose stuff V 15 ft hilp they only che The to the casing has been the place to day. On W. sule the much culary I at the trentown loose stuff on harter stiff below, to retaining wall for bose

3)

its outer end to 39 & 38, then at the heap it is only about 12, & cut in built stones; then S. of the heap it is 8,7, & finally only 5; only about 3 or 4 ins deep, & cut into built stones [\Re] But, strangest of all, on reaching <near> the basalt pavement it forks thus [\Re] . Now <u>can</u> such an arrangement

have anything to do with setting out or marking azimuths?

What use in such a case could it be to fork it, without the possibility of ever seeing along it? It has a fall apparently all the way from the pavement to its outer end; & some people would see in it a very nice drain to carry off the water when the basalt pavement was swilled down clean, in whatever temple or building it was situated. Scraps of finely polished dark grey granite were found; & yesterday a piece of a statue in red granite. If this trench is not of angular importance, how will the others fare? Of course I shall fix it, as well as the others, to less than ¹/₄ inch so as to be more accurate than the dressing of the rock. Besides this the E. limit of the basalt paving, – or rather the rock cutting that once held it, - was tracked farther, & the rock cutting for the pavement of one of the little Δs uncovered close to it. On $\Delta^1 E$ face, the hole in the mid. of face was continued: on S. face the hole (abt $\frac{1}{3}$ from E to W) was finished to rock, about 23 or 24 <ins> under paving level; & a fresh hole begun in mid. of face, which will be about 15ft deep, they only cleared the loose stuff around the place to day. On W.side the hole to the casing has been much enlarged at top to remove loose stuff, making a platform on harder stuff below, & a retaining wall for loose stones: of

course the list if fills by chat has new interit, I will be mue Enlarged when "it is cleaned which will be true own. The chan apply the Dr were farther cleaned to be I should like beet on michen, but no can be usefully put tomost hely, on theme to would have by keep more men well som 4 they weed attention Every the deep shafts that - I can feel say about Ishould risk some ofthem being ite, a more on hand , had they but affering turn it is necessa In where the metbick shall be shot, so as any future continger m diet soup stapiona to y + lemma with one can she off all the day . Beck by 10 to brenky they went stantaneon, Exc . it will give me ilk tun) (out of blind lathe of for bright to the Exposure for da y after wen; only had tim about 9.1 Alle presalt pour thecent clearing in wy end of Notrenda a lide in bottom ofit, thro

course the hole is filled by what has run into it, & will be much enlarged when it is cleared which will be tomorrow. The chambers up by the Δ^2 were farther cleared, to half depth.

I should like to get on quicker, but not more than two men can be usefully put to most holes, or three to the shafts; & I could hardly keep more men well employed & looked after, for in many cases they need attention every hour, & it is only the deep shafts that I can feel easy about for a whole day. So I should risk some of them being idle, or going wrong, if I was to take many more on hand. And they need not merely supervision, but at every turn it is necessary to take in a fresh state of affairs, guess at what should next be done; &, above all, decide where the rubbish shall be shot, so as not to be in the way in any future contingency. Happily I am better to day, & have dropped my diet of soup & tapioca, venturing on cucumbers (only the insides) & lemonade. With cucumbers so plentiful here one can slice off all the opaque part, & just eat the watery centre to get the flavour.

Thursday Nov 10

<15 men & 2 boys as before.> Out by 7 ½, mending a pick handle, & then directing men for the day. Back by 10 to breakfast; another short run out before they went to dinner; then back to tomb & making a drop shutter for instantaneous exposures in camera (out of blind lattice & milk tin); it will give me 1/25 second minimum, & this with no stop in will be right for bright objects; but not lifting it so high <for the fall> I can double the exposure for darker things. Then out again by 3 & looking after men; only had time for a short job <after>, so measured 1st 30 courses of N.W. corner. Then back to supper, writing, & to bed about 9. The work done to day has been tracking the E. edge of <rock cutting which held the> basalt paving, & finding S. edge & following it. Clearing inner end of N. trench a little more, & sinking a hole in bottom of it, through 7ft of sand, without any end

26 yet. Sinking other holes along the NNE truch & find the where it more ; possibly another wan(?) may join it , an E cleaning bore stuff around the shaft ; the brabs me first, through Isupposed their self , working by the day. But no, the bottom stuff, tim Julich course they broughbut all into the shaft monorately, that them I stopped them Atte Slope, so as much they striff took all the day On W. sile min face, the like to no the love part has been y down , + then steming the love staff they were gou t. My chard my yain sft light fits bottom , approver stelling decays but the trace fits form to it is no good to clear To mel the paver weathered just outside it. I then directed with a narrow cut N. IS. 20 as to them to lengthere the lule have two plunctures as far apart as possible to take the exact a simonth as well as position ofthe cope. Allowed set the

yet. Sinking other holes along the NNE trench to find the spot where it narrows <widens>; possibly another drain(?) may join it. On E. face Δ^1 si clearing loose stuff around the shaft; the Arabs never will do this at first, though I supposed their self-preservation would lead them to do it, working by the day. But no, & so this morning having gone nearly to the bottom, Ali got frightened at the loose stuff, tons of which were ready to pour in with a touch; & then they began clearing it round the mouth! Of course this brought it all into the shaft with a run; & I stopped them immediately, & set them to cut it away on the flank of the slope, so as run it down away from the shaft. Clearing this stuff took all the day. On S. side <mid. face>, having cleared loose stuff yesterday sinking was begun to day. On W. side mid face, the hole was cleared out after enlarging; the loose part has been cut away so as to leave a platform halfway down, & then the large stones built into a rough steining to keep it back. This simple point of steining the loose stuff they were going to omit, until I told them expressly to do it. They cleared out all the rubbish & uncovered the casing again, tunnelling partly so as to expose about 5 ft length of its bottom edge, & 2 or 2 ½ ft slope of the face. It is wretchedly decayed, apparently from 1 to 5 inches off all over it, in deep holes & much flaked: so it is no good to clear it, but the trace of its former extent on the paving is clear within 1/10 inch, the paving being much more weathered just outside it. I then directed them to lengthen the hole with a narrow cut N. & S. so as to hang two plumb lines as far apart as possible to take the exact azimuth as well as position of the edge. As well At the

chambers by A' the one Iselection is being Apan tabout half it hepith; the rest can beturn Hom in section 'as to clear the 20 successively all along it. mich allthe There soon top truches to) Alantinea mincellancour & wor last was brought why with 56 I wanter says, so a bas with the on the un possibility from getting through them only 32, which will A concluded by taking when brought them struck in bohing, with a prove frank + c than the Pyramin Arabs, who will as if their canseless squebble the cash has sharpened them are since them birth. He belonged tothe Delte, westa bedawing that had a good Education abten university-morgane of El Asheer allains; he as a marchant in hours Egypt had travelled me was settly in this village having marries her liter there a plist. flin, which he repeated ; fellow mundiately assented, & offend totale encampments for plaster; but Atune. Introd when Lest un stock 1 ierse not up Hanghton quickly willing . the unhabilants Jean aut at 7= t 9, 11 t72, tit 5 Norli the instantanen Moshelter is the second, & I answer ily expressed plate; with a boy ing up the SE corner but which has left it ey, 2 we had vertical there. two men did up come to # 13 the top. The work down was carrying

chambers by Δ^2 the one I selected is being farther emptied of sand, to about half its depth; the rest can be turned over I think in the chamber
by spade,> so as to clear the floor in sections successively all along it. I hope soon to finish all the miscellaneous Δ^1 work (trenches, &c) & put men on to Δ^2 . I wanted eggs, so a basket was brought up with 56! I remonstrated with Ali on the impossibility of my getting through them all while good, & concluded by taking only 32, which will last me a week probably. The old man who brought them struck me much; he was very fine looking, with a more frank & cheerful face than the Pyramid Arabs, who look as if their ceaseless squabbles over the cash had sharpened them ever since their birth. He belonged to the Delta, was <of> a Bedawi <family> & had had a good education at the university-mosque of El Azhar at Cairo; he had travelled much as a merchant in Lower Egypt, & now was settled in this village having married here. I told Ali I should like to have a photo. of him, which he repeated; & the old fellow immediately assented, & offered to take me out to Bedawin Encampments for photos; but I declined for want of time. I intend when I get my stock of plates (for which please rub up Houghton quickly, if he had has not sent them) to go down to the village, & get a lot of the best examples I can find of the inhabitants.

Friday Nov 11

Out at 7 ¹/₂ to 9, 11 to 12, 1 ¹/₂ to 5 ¹/₂ as usual. I tried the instantaneous drop shutter, 1/25th second, & it answered fully, giving a fully exposed plate; with a boy dashing down a basket of sand, which is just falling from his shoulder to the ground [¹]. I tried measuring up the SE corner but was checked by the great amount of quarrying, which has left it almost vertical there. Two men did not come today, so we had 15 13 & 2 boys. The work done was carrying on the

pit in Notresel to get deep one the sich ; the the side caving, I as no bottom was neached, & That it for the present stones ware in the way ing farther along the NNE trench . I find the broad in the wich, suto with an in part ent Atten there has been built tim slyhty cu my was later may say that then . Un S. sul . E. filler was sula S. Lace was carried . The hole in & this , threater ; 20 w at last a by store or shall have to sulary + steen it as well cleaned a little at mos so as take to survey it to morrow, The el cleared pairs, but no door with it has get been Anorod en hobburg for these h thrug but each shaft would need about IT go tas twan atouce, Ishould need 4 or 5 yrs : also tohould need to personally arrangent to on the which Ithink one get the work all betach an Estra days del his in trafes besich this leaving the sha

(4)

pit in N trench to 9 ft deep down the sides; the men were then afraid of the sides caving, & as no bottom was reached, & big stones were in the way I left it for the present. Clearing farther along the NNE trench; I find the broad part cut in the rock, ends with an irregular surface at the inner end; & then there has been built, on the surface of the rock, & very slightly cut into it, the narrower channel in construction of it. Of course C.P.S. may say that the basalt paving was later than the Δ , & the trench was utilized for a drain then. The S. side of the basalt pavement was traced farther, & connected with the curious <little> trench cut from the inner end of the S. trench. The big hole on mid. E. face was enlarged & steined in upper part. The hole on mid. S. face was carried down, but just at last a big stone dropped in & others threaten; so we shall have to enlarge & stein it as well. The W. hole was cleaned a little at ends, so as to take plumb lines, & as I hope to survey it tomorrow. The chamber by Δ^2 was farther cleared of sand, but no door into it has yet been found. I have much thought of wooden tubbing for these shafts; but each shaft would need <at least> about 1 1/2 squares of board, beside strutts, to do it; & as I want, for saving time, to open three shafts at once, I should need 4 or 5 squares of board; also I should need to personally arrange it in all details, & on the whole I think one gets the work done quicker & cheaper by spending an extra days delay & two or three shillings in wages to enlarge & stein < the dangerous part of> each shaft; beside then leaving the shaft probably open in the future,

. Also instead of the caviny in a wing boarding to valiable here that Isbould fear the hit stolen out Atte shaft at night. Saturday Nor 12 Wp at 6 tgetting the to Viside 1 A' as brown to to get that the sun cause on these at 10. Put up signaly & Asserned in a point close to the shaft by 10 incle there ; to owing the ground, toget the big there to any it could see (at less than 14° dif) the . Hunge dwas Abliged to piece the work this. Touch a 20 for by them set the Sinch the find finit of the planet lines then Non The fix a simuth ofther Itu they the which is 6 ft apart. The along the traces of the cas to take the man treny plu laying across shaft, y this Finel of basalt Clean the one side of Hovers Vyre's East-cut on N face; locu

instead of its caving in on removing boarding. Also wood is so valuable here, that I should fear the tubbing being stolen out of the shafts at night.

Saturday Nov 12

Up at 6, & getting instruments out &

off by Ali to W. side of Δ^1 , as I wanted to get that fixed before the sun came on there at 10. Put up signals & observed them from a point close to the shaft, by 10 inch theod; it was impossible, owing to the ground, to get the big theod to any place where it could see (at less than 14° dip) the plumb lines that I hung down the shaft. Hence I was obliged to piece the work thus; fixing a point on ground within 1/10 inch or so from by observ^{ns} on 4 fixed points <known stations> (one a check); I then set the 5 inch theod between the fixed point & the plumb lines; then observing on two of the known stations & to fix azimuth of theod, I then observed the fixed point & the plumb lines & a known length of rod at each of them to fix their distances lineally. There the whole is fixed to <.2 or .3 inch>. The two plumb lines are 6 ft apart. Then I went down the shaft & stretching a line along the traces of the casing edge, in order to take the mean of them, I measured off distance of plumbs from the assumed casing edge. This finished the job, & I got back to tomb, f had my bath, & breakfasted about 2. I found the two 140 inch round rods (divided to 10 ins) very useful for laying across shaft, to carry plumb lines. Then after breakfast out by 3 ¹/₂ & going over the excavations. Back by 5 ¹/₂, paying men, supper, writing this, & to bed about 9 ¹/₂. The work done to day is <finishing> cleaning a long piece of NNE trench to shew junction of its built & hewn parts, & its expansion; clearing more of S. limit of basalt paving, & searching again fruitlessly for <rock cut> edge of \triangle pavement on E. side; it has never been found except on the Western half of N. face. Clearing one side of Howard Vyse's East-cut on N. face; went below

paving level, but us paving there. In the East shaft in middle they reached a flat store, & dirent own & saw it to tode of pavement, but none on wors. for I the , it forward to be 26 ms over pa me stated lifted up; but as it is flat shope in there is zur casing there least standing in a necessile upto ploose mu it tight acr in stanty but at the worst so tuch & though we are S. sill the clea stend but reach for though I fix the hole Still this is the only of the rubble wight on it. Shis, of my three shifts were hight her at

paving level, but no paving there. In the East shaft in midface Δ^1 they reached a flat stone, & I went down & saw it to be a block of pavement, but none on W. or S. of it & therefore displaced; on levelling, it proved to be 26 ins over paving level, & therefore displaced lifted up; but as it is flat slope we may find paving beneath it; at least there is no casing there. Just after I had examined it, while standing in a recess halfway up the shaft, some hundred weights of loose rubbish came pouring down, quite unprovokedly; it would have fared badly with me or an excavator, for it buried & almost broke my measuring rod, jamming it tight across the shaft. The men wanted to haul me out instantly, but I saw it could not cover me at the worst, so I stuck to my place. The Arabs can hardly be persuaded to work in that hole again, though we are going to have a quantity more rubbish cleared away. On the S. side the shaft is continued, the bad part being mainly steined, but more clearing is required before going deeper, & we must go 10 feet farther to reach paving.

This is all working in the dark, for we may just miss any casing stones, as likely as hit them; for though I fix the alignment of the hole well, yet one can see on the N. face how easily a shaft might be sunk in the middle, & yet go just to the E. of the remaining stones. Still this is the only thing to do at present. The next method would be to tub all the shafts, & run tunnels between the holes, lined with wood; & all this wood would need very strong strutting & supporting if the rubbish gave way & threw any weight on it. This, if only three shafts <in one line> were kept open at any one

time, would need at least 15 squares of boarding, I a propurtion This is a big amount of logs for struth isvines here troub new preparation sterials & brubs. So on the while hund stick to shaft, these shaft take about 5 bays each , (the w. took this , + the E. a Smen on an a fall today y bad cases ; in the very first of rep with align cet Down thit, for the present Depth is still 26 was fa 5 10 cut ala or a chanter 10 ft - h 50 Alter Da ×then mon a we gue the dances

time, would need at least 15 squares of boarding, & a proportionate amount of logs for struts &c. This is a big job beyond my present resources here, & would need preparation both of method, materials, & Arabs. So on the whole I must stick to shafts & steining; these shafts take about 5 days each, (the W. took this, & the E. also till this fall to day) using 3 men on an average. This is a cost of about 12/-, or say 15/- including bad cases; & by trying three or four holes on a side one would most probably hit casing if there was any; for in the first deep shaft <(W.)> we found casing, & there may be paving with alignment in the second hole when we get down to it, for the present depth is still 26 <ins> over its level. The chamber out by Δ^2 was farther cleared; but they do not get on quickly, as it is too out of the way for much superintendence; the cost on a week's work comes to 10 cub.ft. of sand carried out for 1^d, or a chamber 10 ft by 40, & 6 ft deep, half emptied <to 3 ft deep> for 10/-; turning over the rest of the sand, should cost less than this. As to searching for casing, I am only trying these deep shafts after trying pits near there corners first, & then medium shafts about 10 ft deep; so they are necessary if we intend to find the paving & casing.

> 8.– <u>Cairo.</u>

"Cher Lecteur

Amiable Lectrice,

Et vous aussi qui ne savez pas lire"

So, begins a photographer's notice posted in Ezbekiyeh inviting people to "mon Etablissement restauré "avec le bon goût que me caractérise"!!!

Letters rec^d to Nov 3 & 4: but thanks hence, M^{IS} B-

Sunday 13 Nov Slupy after restertay, twas welt wske a as that amongs to go theirs, town ; got in ghtthe begin a durch . A was there but & him higchian V enited atten of last men Schu tal this trip as I was The how 4 6 11 stowardy, the Dr Excountion here & for the new hos t. wet H some connected with with this the ent pur Liptu have arrived up by 7 + Nout arrangin thomalipast. Out 102 to 72, + 2 to 5 2, hafternoon emanned three ofthe southet trench suds into relation with station me

<u>Sunday 13 Nov</u>

Sleepy after yesterday, & was woke at 7 ¹⁄₄ by Ali calling me, as I had arranged to go to Cairo. After a brief breakfast off on donkey to town; got in a little after $10 \frac{1}{2}$, but found service not yet begun at church. Dean Butcher is back again, & I liked him rather better than before. M^{IS} Grant was there, but I did not see her. Saw Corbett on coming out, & Miss Machlean & her sister in law Mrs M., whom I had guided at the Δ 's last year; they have just come out. Then to post got letters of two weeks & paper; went into Ezbekiyeh, & sat reading letters, till near one, when I went to Dr G. There I staid lunch, & had a talk to Mrs G., & also Miss Schultz their German governess, who though speaking excellent English had never been in England till this trip: also saw little Jessie who is as bonny as ever. Mrs G's luggage, including our box has not come yet, as it was stowed in the bottom of the hold, contrary to repeated requests. They had a bad voyage; three gales, a death & burial, 11 stowaways, & 46 hours waiting outside the bar at Alexandria. The Dr was much interested in the progress of excavation here, & after a talk with him, on the site for the new hospital, &c, I left. Posted letter, got some fruit; met Hooker, & a friend who seems connected with the antiquities dept here, & then back to here about 6. After supper, <re-reading letters> & putting some quinces to stew all night, I wrote this, & to bed about 11. I heard that Mr & Mrs Loftie have arrived.

Monday 14 Nov

Up by 7¼ & out arranging the work. Back by 9 to breakfast. Out 10½ to 12½, & 2 to 5½. In afternoon I measured three of the socket trench ends into relation with station marks.

The work down to day is cleaning out some of the s well tranches at the N. F. comer A D' which have surveyed; unfortunatily carries road fo a with platean I shall une them , but as it is be abiall Astruction time so as not to shaft was made in Howerd Vypes E. Lule on V. face in permy level was there is safer by can thegun the from it m Sinda was continued 1 sand . winnly why Amart yel N.W. Locket to comeet sale to Faturda france fell gown, with in « li brow veil - n V a thick a sumply suffer of foiled app statutes one atteration & that a very Isturked sight, but by 74 tothe Jey, V In h g'a to 7/2 ; then out needed enting NE part of the complex su mby J Z suy 82. work wrotting of the about in E. face; it was cleaned orman as far as ;) then went tom , tornector the

The work done to day is cleaning out some of the small rock trenches at the N.E. corner of Δ^1 , which have never been surveyed; unfortunately the carriage road goes over them, <u>but</u> as it is a wide plateau I shall uncover half at a time, so as not to be all obstructive.

A second shaft was made in Howard Vyse's E. hole on N. face, but nothing but rock under paving level was found. A cut was made beside the N trench to see if the rock was levelled or if there was any step: it is all levelled & smooth, between step of trench & pyramid < from trench toward pyramid.>. The shaft on E. side Δ^1 was made safer by carrying a quantity of stuff away from it, & begun to be cleared out again. The shaft on S. side was continued. The chamber by Δ^2 was farther cleared of sand. A cut was made in Δ^2 rubbish (where previously cut by Howard Vyse) at N. end, W. side, to find casing to connect to N.W. socket. In all 15 men & 2 boys employed. On Saturday I saw a curious traveller, a lady accompanied by an <English> gentleman; she was riding on donkey, in a light blue full gown, with a large black straw hat on, & a thick brown veil <over her face & neck>; hugging in front of her on the donkey a pug dog in her arms. Could "insular eccentricity" go farther?

Tuesday Nov. 15

Unhappily a sample supper of boiled eggs & tapioca, upset me altogether, & I had a very disturbed night. Out by 7 ¼ to the men. In by 9 ½ to 11 ½: then out, rested a bit in shade at midday, & in aft was planning part of the complex small rock cutting N.E. of Δ^1 ; beside looking after men. In by 5 ½, supper, going over obs^{ns}, wrote this, & to bed about 8 ½. Work done to day was going on with shaft on E. face; it was cleared down as far as before, but enlarged; I then went down, & directed the shifting of a big block,

I & tow them to clear under it , Necer from Ali that they reached etting, musst examine tomorrow. Shaft an S. side continued, both officese take 4 men Each me a thift, & a surface man to therow away his N.E. JA' were cleaned up unch nime ; they are barthy menely remains & cutting Nom the : wish to get them all plotter I'm; but must doit preservered, so as not to cut up the platean forcarriages abouce. I fut was must be cle on S. side, something like it is found, but The hele on WNWA 2 has gone to mon to settle it. but caring is all disturbed, this matters little as the there is south different to rothat there is a flat surface indigate boken surfair of dectroyed well Defined, + an I can outrule it. Muy was { the on the shifted blocks the hey why aforting frank at this to level of stone underst, it is nearly as good comy. Isspeet they at pto the dup bottom edge observing how liable &' stones with a then egge were to break by chance blows on the from level inforcer I also from the time eye being very nicky to work in grac level often paving more caring is 122 over NW sochet, whe for forting leaves 20 2 for pavement outinh caring Exactly what formed at SW, 11 forting + g: suching a) been the men to clear at NNE 1 Dr; much dyging Tone for stone, & hicking the man Thave was one who there, I could say what there was, I have for destroyed. The alignment of edge framing in WNW lish is written in inch or two & of a faint drafted line in webet floor, which Thad already supposed to mark eye from casing. We seecharly now

& told them to clear under it; I hear from Ali that they reached rock or something, & must examine tomorrow. Shaft on S. side was continued. Both of these take 4 men each, one to dig, two stationed to lift, & a surface man to throw away. The small trenches N.E. of Δ^1 were cleared up much more; they are partly structural, & partly merely remains of cutting down the rock in parts unfinished: I wish to get them all plotted down; but must do it piece-meal, so as not to cut up the plateau too much for carriages at once. A pit was made to find edge of paving on S. side, something like it is found, but must be cleared more to settle it. The hole on WNW Δ^2 has gone to pavement but casing is all disturbed. This matters little, as the method there is quite different to Δ^1 , casing being thus $[\mathcal{R}]$ so that there is a flat surface, ending at a joint at edge of paving, & a broken surface of destroyed pavement outside it. This was found well defined, & as I can measure the height of footing of granite $\{[\Re] \}$ on the shifted blocks, & add this to level of stone under it, it is nearly as good as finding casing. I expect they adopted the deep bottom edge from observing how liable Δ^1 stones with a thin edge $[\mathcal{R}]$ were to break by chance blows on the ground level on pavement; & also from the thin edge being very risky to work in granite. The level of this paving <u>under</u> casing is 12 ¹/₂ over NW socket, which + 8 for footing leaves 20 ½ for pavement outside casing (1cubit) & this is exactly what I found at SW, 11 footing & 9 ½ sinking = 20 ½. I moved the men to clear at NNE of Δ^2 ; much digging by Arabs had been done for stone; & luckily the man I have was one who dug there, & could say what there was, & how far destroyed. The alignment of edge of casing in WNW hole is within an inch or two of a faint drafted line on <NW> socket floor, which I had already supposed to mark edge of pave casing. We see clearly now

that D' has no bearing on the among ement of D' socket + can as it is certainly made differently. The chamber by D' we cleard further, 85 feet wall being more orlen safred b midday today, yet no door turning, or cross wall; set to is a chamber as it is only 9ft wide between sides. I do ustryet understand it Jam song toray the poor ou black by has come the sud from starration , not understandy how to pick of a lis Aten prettemen in return circumstances, Uppletelaste the children had dragged fin up thaid him acrossing Tim over the wich to some touts over; I should but the little writches brought him up ayam our Atter men that him decently interned between two by stones, some so ft or 20 Nov 16 aut by 7= Examined luk a E of & of ound that edge lying on a rotten parement store; they were menery oils ofthe edge which stuck behind when the casing store had been ongged out from the sand which covered it; the sand being hard & concretion for some fact dup outed the programent + slywelly our them, & them the real of the space to A full of loose chifes of stone. I did who are taile Tushe allottom as there wentoo on mous crace only bit thankund sand that upplield and zich ofthe lake the N. the line ofcaring was concerned by a large fallen block that ut be safely sterned. In fit sparing were much scaled Javing also so that manyle could be measured both being bad atom : the steepest bit grasing being only Still it was caring, because the faverent under it was presh & outside it much weathing; & there was a joint in it. Also it is 25 or 30 in inside socket his like at right level , & its line sites. There to setting men to other holes. On S. hole they said they h sloping store, Vor. going down found easing, also much decay but with a close joint & the 2 ft or so over faming level, they had

that Δ^2 has no bearing on the arrangement of Δ^1 sockets & casing, as it is certainly made differently. The chamber by Δ^2 was cleared farther, 85/<6> feet of wall being more or less exposed by midday to day, & yet no door, turning, or cross wall; yet it is a chamber, as it is only 9 ft wide between sides. I do not yet understand it.

I am sorry to say the poor old black dog has come to his end, apparently from starvation; not understanding how to pick up a living, like many other gentlemen in reduced circumstances. To prevent that The children had dragged him up, & laid him across my door; I shovelled him over the rock to some tomb beneath; but the little wretches brought him up again; so I sent for one of the men, & had him decently interred (for the sake of my nose) between two big stones, some 50 ft or so away.

Wednesday Nov 16

Out by 7 $\frac{1}{2}$ examined hole on E. of Δ^1 , & found that there were fragments of casing edge lying on a rotten pavement stone; they were merely bits of the edge which stuck behind when the casing stone had been dragged out from the sand which covered it; the sand being hard & concreted for some feet deep outside the fragments & slightly over them, & then the rest of the space up to Δ full of loose chips of stone. I did not dare to enlarge the hole at bottom, as there were two ominous cracks in the only bit of hardened sand that upheld one <the S.> side of the hole, & on the N. the line of casing was covered by a large fallen block, that could not be safely stirred. The bits of casing were much scaled so that no angle could be measured, & the paving being only 37°. Still it was casing, because the pavement under it was fresh, & outside it much weathered; & there was a <vertical> joint in it. In Also it is just at right level, & its line is 25 or 30 ins inside socket line like N & W sides. Then to setting men to other holes. On S. hole they said they had got sloping stone, & on going down I found casing, also much decayed, but with a close <vertical> joint & tw 2ft or so over paving level, they had

yun the hole slanting in towards A, 450 got of the line than them on thirt on stones about 2ft inside the edge . I told the to enlarge the bulk on twent, you to the size , But this sach Jistihing towork afthe bottom me was clearing the rock sop (apple the other work I near small A by h t at SSEAL NNED , how enlarged. Roc It in the big well of mothersh A' cleaned. Cut No D' shewing retain against a cyclife an wall beside the geliferen wall to - hold up the reablish also have undisturbed. the & free is hetter jointed or cased, ul chamber wall frend NW 1 22 beyour of to feel. He we work was taking a plate (unhappility of work cutting NE MA from the doug space of to see a hollow part fit. texin bob Som the list, set sind triod. 30 ft prove it, fixing place by observe & stations of plumb by No. on it, & on lengths of vod suff slifting the circle between each round fors to more the time set ; the mean com freading (incl they shewn to be 8" on one obs. of two bad statures) is y zome Azin Leve by 11. Corbett sent up a card to hum if ship here to morrow right, trit some carly diretting on (unalin Sunday + 20 always a holiday to him); I sent bach be athome 17 Nov authy 7= firmy men broken away sloping, two , but paving still it is well worth having farther, It is about 30 is inside to When other sides. The by gi to breakfast; then out till

run the hole slanting in towards Δ , & so got off the line I had set them on, & hit on stones about 2 ft inside the edge. I told them to enlarge the hole outwards, & go to the edge. But they hardly did anything all day, each disliking to work at the bottom for fear of falls. The other work done was clearing the rock edge (apparently cut for basalt pavement, near small Δ by Δ^1 . Searching for pavement at SSE Δ^2 . Paving found, & former edge of casing defined $[\Re]$ at NNE Δ^2 , hole enlarged. Rock cutting N. of Δ^2 cleaned. Cuts made in the big well of rubbish heaped against a cyclopean wall N of Δ^2 ; shewing retaining walls to hold up the rubbish; also beside the cyclopean wall to see if it is better jointed, or cased, where undisturbed. Ch A fresh chamber wall opened NW of Δ^2 , the former being untraceable beyond 85/<6> feet. My own work was taking a plate (unhappily over exposed) of rock cuttings NE of Δ^1 , from 70th course. Also going along S face of Δ to see a hollow part of it. Fixing position of casing on E. side by hanging a plumb bob down the hole, setting 5 inch theod. 30 ft from it, fixing place by obs. on 4 stations, & fixing plumb by obs. on it, & on lengths of rod supporting it. I tried shifting the circle between each round of obs^{ns}, measuring 120° between the three sets; the mean error of reading (including pointing to two bad <lighted> stations) is then shewn to be 8" on one obs. of two verniers. Then in by 5 ½, supper, reading some obs¹¹⁵, developing photos, writing this, & to bed by 11. Corbett sent up a card to know if he could sleep here tomorrow night, to get some early shooting on Friday (Muslim Sunday & so always a holiday to him); I sent back saying I should be at home.

Thursday 17 Nov

Out by 7 ½ fixing men. Went down S. hole Δ^1 & found casing & paving, but $\pi/\langle p \rangle$ aving broken away sloping, & no good edge to casing; still it is well worth having, & so I told them to clear it farther. It is about 30 ins inside socket line like other sides. In by 9 ½ to breakfast; then out till noon looking

after man; there laying Jour chain with the tim sting the salused NE trenches them taking two plutos tahen wor to be filled up ay an . Then common sinch plumb bib hang in S hole 1000 on mister by surset. Ande to support then had supper of a talk. Ithen deviliged well, then write this fortuned tosen witten a luch for paving soft on Seich natural , so no trace of paving eon can when but on N sile. a hole in at 50 out party, mendies NE D were of Strench way cleared out the July of the bequal Two burtes were charing to shew it face venstruction. also a fa aces of stone wall be 1 22, shewing that called heafend store method is really a fine wall of buries in blow saw. to another begun to be traced out. A hole finited on 552 A to be substructive fearing shearing the edge; by another whe such on ESE to a similar Edge, & Extended taken I now feel happily anchored, in having got marks of caring on sach Ishall try an Easy hole on Fos VE sile caring ; but lean f , why there as she could for leave of the sides caving or stones Friday 18 Nov . Corbett by an tisting up by 5 - (That up in any Toute for line) I after some call por

after men; then laying down chain with Ali, & finishing measuring the exposed NE trenches; then taking two plates to shew working [¹⁰, [10], & then ordered them to be filled up again, in order to cut up the rest of them. Then got out 5 inch theod & took a set of obs^{ns} on plumb bub hung in S hole to fix the casing there, finished by sunset. Back to supper. Corbett came in by dark, I having heard him shooting for some time. We then had supper & a talk. I then developed my plates, which came up very well. Then wrote this, & reduced obs^{ns} partly, & to bed Work done to day was finishing S. shaft. about 11. Clearing farther a hole for paving edge on S. side, & finding the rock to be only natural; so no trace of paving edge can be found in rock cutting at 588 out, anywhere but on N side. A hole in rock by S trench was cleared out partly. Trenches NE of Δ were filled up. Two parties were clearing the side of the big wall some way N. of Δ^2 to shew its face & construction. Also a party clearing faces of stone wall W of Δ^2 , shewing that what has always been called "heaped stone rubbish", is really a fine wall of rough stones buried in blown sand. Ch Another chamber wall was begun to be traced out. A hole finished on SEE Δ^2 finding what I believe to be substructure of casing shewing the edge; big another hole sunk on ESE to a similar edge, & extended to shew more of it. I now feel happily anchored, in having got & fixed casing on each side of Δ^1 ; & finding marks of casing on each side of Δ^2 . Perhaps I shall try an easy hole on \mathbb{W} S & E of Δ^1 to see if I can find better casing; but it is not worth a bad hole like these, as Ali could hardly get the men to work in Ch < the E & S> for fear of the sides caving, or stones dropping down.

Friday 18 Nov.

Corbett began to stir up by 5 ½₅/<(> I had put the spare bed up in my tomb for him) & after some cold porridge &c

Sfor an hours slup more, y then en. Back for bath Abreakfust aut ayam toer the Then found the arcul all be on the Dawn, and by the filled it ythen ation : 20 brough - borling st 2 on to an inch or so, the E. + 1.8 5. - 2.7, YW. maby be these an to but by our despute the and abrach place paving that was as funst colsome, they work for more The usual 15: Carro tobank a new hole was b 4 oul 10 ar 12 ails ; these are in parts where the out bush (not of + 20 like the others) & where is ft but work they are not the so near the unally of the does as lating in v it wor it beller. were clearing various parts ofthe walls NW of A sud: Attroactions than chand are just smiler

he went off. I got an hours sleep more, & then up & out to the men. Back for bath & breakfast. Out again to see them all before noon. Then found the circular level that I lost last year <season>, lying bottom up on the sand, out by the most desert-ward quarry station: so brought it in, refilled it, & then before screwing it up tight I heated it to near boiling spirit heat, & closed it hot, so that the bubble is a vacuum; also rubbing wax on the joints of it while hot. Then out in aftⁿ & roughly levelling, to an inch or so, the paving found on E. S. & W. sides of Δ^1 : the results being E. +1.8, S. -2.7, & W. + 1.7 N being 0; but these may possibly be <as much as> these amounts in error; my object mainly being to put beyond dispute the point of its being really paving that was found at each place, as the casing is so much disfigured. Then round works with Ali by dusk, to see what is done, & fix work for tomorrow; as I must go to Cairo, to bank, &c. The usual 15 men & 3 boys were employed. A new hole was begun on E. side Δ^1 & another on S. side; these are in parts where the rubbish is only 10 or 12 ft deep (not 18 & 20 like the others) & where it is hard & good to work, they are not no so near the middles of the sides, & therefore not so likely to find casing; but as casing is very poor & ill defined <in deep shafts> on E. & S. I think it worth trying an easy hole on each side, for the chance of finding it better. Four parties were clearing various parts of the walls N. W of Δ^2 . I now see that what I thought to be chambers are all long galleries, about 100 ft long & 9 wide, only open at one <some at both,> end; & those that I have cleared are just similar to the other

40 mor such parallel wells that said all about the W trought them to be places for oresing stones, as the ups of store rubbish always called about 2 or 6 ft high even zuve are really all walls are all well mede with walls - store I now think the tamly of A date, some vo intended suppose that just allow parraye would 1, 100 lt- low : som alabart refler with crown of all the size ; there have been brought out of pour touch the exclusion wall moreases in steley down moreness of it, maky me on the Ssi the cut I see on two any long to the 200 art Atte Plach o s removed the

40 or 50 such parallel walls that exit all along the W side of Δ^2 . I thought them to be places for dressing stones, as they were always called "heaps of stone rubbish"; but they are really all walls, about 4 or 6 ft high even more, & filled with drifted sand. As they are all well made, of rough stones arranged with a smooth face, & mud plastered; & exactly similar to retaining walls for stone rubbish which are certainly of Δ date; I now think them still to be of Δ date, & intended for some rough, but rather permanent purpose: and I can only suppose that they were the workmens barracks [**1**]; 9 ft wide would just allow passage & length for one man to lie: if 100 ft long each they might hold 40 men; & about 60 such galleries would thus house 2 or 3000 men which would not be at all too many for building Δ^2 . The style of the walls in roughness & in permanence would be just suitable for such a purpose. In one cutting many fragments of diorite & alabaster statues were found; some alabaster painted, & one piece of a forehead & half the eyes crowned with crown of Upper Egypt, about half life size; these have been brought out of some tomb & smashed in Ali's opinion, & he is probably right. Also a wall clearance was made on N side of the cyclopean wall some way N. of Δ^2 . It shews the blocks to have heaving holes $[\Re]$ on the lower edges, & that the wall increases by steps downward; both of these points, & the general rudeness of it, makes me think that it has been cased. In the cut made on the S side of it yesterday, I see on two stones cubit marks $[\mathcal{R}]$; but the stone is 90 ins long, so the 2 cubits cannot refer to the length of it. A hole was also made on ENE of Δ^2 , but came to rock about 18 ins under the proper level for paving. That wretched Whitey went & dragged up part of the black dog, buried three days ago, making a fearful smell; so he was removed, & buried more securely farther off.

> Cairo. 9.

19 Nov. off about & theirs . for to huse Saturday by 10 2 + Saw mars sero, who was as palets of pleasant as Mound , Alten Star we thought it two laste Brannet letter as Evidence of which bernthe keep 2 Who he was but asked B. who falsely way 600. At shell (he is really a con of a news) that was therease perhaps it would make too to Displace him now. Hi, tells me that ever to have mysel or his people Johns was morgactly orrented said that the (in percel, impinished, they poorly done) also steen ; Demond to that nte temp CIP. S. pole star obser on it which shew + Jasked what Observations strumental brenations sur a pole Dear no nothing to 1, CAP. S. Dos my X of the general very noon day sun. but he said that Evena langer dif bain no it again by prestar un so long

Saturday 19 Nov.

Off about 8 to Cairo. Got to Museum

by 10 1/2, & saw Maspero, who was as polite & pleasant as before. I told him what had been done & found, & then asked to have my permission extended to the other Pyramids here, which he immediately granted; saying "We thought it better to give a order for the two large pyramids first", shewing I think that it was Brugsch's doing, as Maspero's written order to B. (as I saw) was to give me permit for everything in my letter, & keep my letter as evidence of what was permitted. I also mentioned about the Museum man being of no use, & Maspero did not even know who he was, but asked B., who falsely told him that he was bro. of the shekh (he is really a son of a reis) & so then M. said if that was the case perhaps it would make too much ill feeling to displace him now. Ali tells me that only a portion of the 10 piastres a day goes to him < the man> & he has to hand over the lion's share to Brugsch or his people, under whom he is. Brugsch said that the sphinx was not exactly oriented, & in proof brought out a plan (in pencil, unfinished, & very poorly done) in which he had the granite temple also skew: I demurred to that, as I remembered C.P.S. pole star obs^{ns} on it which shew it to be very nearly true, & I asked what observations there were for it; "Oh, instrumental observations"; by sun or polestar? I enquired, Oh dear no nothing so crude, instrumental observations; & at last the "bussole" came out as the means!!! I informed him gently of C.P.S. obs^{ns}, & of the general verification by looking at it under noon day sun; but he said that he had observed it, <about 6'0> & that some friends of his had found even a larger difference in its orientation; so of course I said no more, after offering during the conversation to verify it again by polestar, which Maspero accepted. They kept me so long for my order, as the

regular scribe was a many that Ty up hurrying end get up to Bank before it closing ab 12. So finding after a hard walk that it - was part 12 al aper, Atten of sharp high fever, beach his . Hunte alway checked tally to lime, & stand timely son I have that a Who is just coming out 4 . they s three weeks to Lunst / Saw the ofter allection of antiques, wh 3; Attim (alke) at Beamany pl 1/ hus crant found an am been ture It heard fall the

regular scribe was away, that by no hurrying could I get up to Bank before its closing at 12. So I went to Post, finding after a hard walk that it was past 12 already; got letters & paper, & then to Hotel du Nil. Saw M^I Loftie who has had a sharp high fever, besides his gout & rheumatism, & is only just moving again. He noticed that one of my eyes was inflamed, as I had felt it to be, & insisted on going & getting me a little Eau du Cologne & water to bathe it, as he said that always checked such a thing or incipient ophthalmia <it much eased it>. I had a talk to him, & staid lunch; seeing M^{IS} L. who has been ill also, & Beaman & Corbett. I hear that a M^I Ellis a friend of B's who is just coming out, & going to join dahabyih, & has nothing to do here apparently, is a surveying engineer, & it is most probable that he would come out & stay at Δ , to do the levelling with me. They expect to start up the Nile in about three weeks; & so I must push on with matters here. Saw the Loftie collection of antiques, which is considerable already; & then looked at Beaman's photo apparatus, which is of the usual type, rather cumbersome, but all workable. Then to D^r G., who $h/\langle w \rangle$ as seeing patients at the time; so had a talk to Miss Schultz, who was at Bulak Museum this morn in a party of M^{IS} Grant, Miss Mullock, M^{IS} & Miss Maclean, &c; so I must have nearly run over them. Strange to say I have never yet found an hour to see the new mummies &c; though I have been three times to the museum to see Maspero; at least at one visit the Mus. was not open. Soon the D^r came in & had a talk about the books: the 3rd vol of the Annotata was already lying by his bed for reading. <He noticed my eye, & gave me some zinc wash for it.> He heard of all the

Doing here with prest-interest. I have found it necessary some proph an ben formerel vesults, in saying that now found the about off less than was mull sides , hul. carring had been as Excent is over It to save some body be Ittunk I shall to 20, Then from the Sr respend after 3, typer \$ 15; for some change in till rut writin Put - Op. in my portfolio, Ittrought they were a forse rome time at Hotel de NUL to hay by a cousi Hooker of , what too u 100 20 Nor Putty various things to replats 1 too ; going thans is etimes a day rest, & joth on Junedays, but that , haft went ", 62 trany 17 miles is not the sky was five, thick masses for all round the between, which could be seen out clouds with reft of sunshine away on the desert with Delta ; & at sunsit the beef orm sur und cloud, while the motion into magges overhead were flecked with runsa on the under sile, Inverhear thunder than seen a

doings here with great interest. I have found it necessary to give some people an idea of general results, in saying that the Pyramid base is now found to be about 5 ft less than was supposed, before the casing had been found on all sides. M^r L. strongly urges me to send a th letter out of line to Athenⁿ as soon as $excav^{n}$ is over, to anticipate anything else that may be said, & "to save some body perhaps from becoming a Piazzite"; I think I shall do so. Then, from the D^r, I went to the Bank, returned after 3, & got £15; got some change, & some grocery, & then back to tomb, not getting in till past 6. Supper, Pub. Op. writing this & to bed about 11. Ham sorry not tofind in the packet of Δ papers in D^r G's box my notes of what had tobe re-examined here, &c, which I particularly wanted, I just find them in my portfolio, I thought they were on foolscap. I was delayed some time at Hotel du Nil to day by a considerable shower; I ran against Hooker again in Muski, who says that he has had a great deal to do, what I do not know.

Sunday 20 Nov

Putting various things to rights in morn, & enjoying the general feeling of having nothing to do; going to Cairo is all very well on Sundays, but I want sometimes a days rest, & getting up at 6 ½ & riding 17 miles is not <u>that</u>. In aftⁿ went for a stroll all round the hill; the sky was fine, thick masses of dark clouds with rifts of sunshine between, which could be seen out twenty miles away on the desert & the Delta; at sunset the cliffs of Turra glowing with a deep crimson under a heavy cloud, while the Indian ink masses overhead were flecked with crimson on the underside. I now hear thunder, & have seen much

lightening har away North over the filte they are way Nov 21 up tout by 72. Fixing men title 10; out a fain I till 52. Cleaning coins spirten vin Even ; Saleinan bronght the ther day the boy Molenny tetradrackers he mentioned of took 20 fthe best as an a speculation ; the the while . I find on clean all the in an nonlean face upon affermably owny to having been bur Attem and in the least worm, but ready all and sater on the head They are of your Sidon, Cylins, Rhode, At tolemais (?). The work done cleaning more of roch trades NE JA, in course of which accidentally found the rock cutting for provement cope on both N & E sides, the measure that missed it before is that it is 5ft A, buy 572 on E + 520 on N; how it at 500 from N. I count imagine, thave set men to find it. now try meaner A outter side for it. The men were taken into the grotte to farther Examine the place he a passage ; they took out a good deal the back it in the large trecar often steming of the well (made afferently asitwas all ; all this stuff had been me losce, two orthone bits down I tan t ly nale found about 3 ft seeps in it. The letters is plain when it cannot be proved not Jassay wother assure in merch those of a water wom allen mo it two or three blocks swhich have stataquized in place before the filling I W. for two m wide & show other ward saw it go w. for Janel

lightening far away North over the delta this evening.

Monday Nov 21

Up & out by 7 ½. Fixing men till 10; out again

11 ¹/₂ till 5 ¹/₂. Cleaning coins at intervals, & in even: Suleiman brought up the other day the lot of Ptolemy tetradrachm he mentioned before; & I (after chattering) took 20 of the best as an a speculation; there were 41 in all & he much tried to make me take the whole. I find on cleaning them
by dissolving chloride of silver with strong ammonia> that few are fine all over, but nearly all the reverses are fine, apparently owing to having been buried en rouleau face upward: none of them are in the least worn, but nearly all much eaten on the head. They are of Tyre, Sidon, Cyprus, Rhodes, & Ptolemais (?). The work done to day was clearing more of rock trenches NE of Δ^1 , in course of which we accidently found the rock cutting for pavement edge on both N & E sides; the reason I had missed it before is that it is 5ft nearer the Δ , being 512 on E, & 520 on N; how it joins to cutting at 588 from N. I cannot imagine, & have set men to find it. I must now try nearer Δ on other sides for it. Two men were taken down well into the grotto to farther examine the place which D^r G. thought might be a passage; they took out a good deal of gravel, stowing it in the large excavation all round the back of the steining of the well (made apparently in search of any other passage); all this stuff had been moved before as it was all loose, & two or three bits of wood & an Arab basket was found about 3 ft deep in it. The hollow is plainly natural, though of course it cannot be proved not to have been utilized as a passage without clearing it; but it has no trace of workmanship, the sides being merely those of a water worn fissure in the lime rock, two or three blocks of which have fallen into it & become stalagmised in place before the filling of gravel: it narrowed to 1 ½ ft wide & sloped downward straight W. for two or three feet farther than I could reach, in all I saw it go W. for I think 18 ft

(Smenny) from the side of the grotte. " observed in two places to well inserted stores of two small blocks (like those ; the steer a better step, in the stepper as well as the su These smaller injertis all fourt to the critte made with care through the Un inequilarities fort I then preces prove this love he sile had comment me stuffy cold in the hear which wat stor 10/- cach respect mobish 20 51 001 seen it is about I do not the in them after this new S. Lich There parties continued work on the walls by Dr to clear up the acter: the aly find way two currens with why sawn waste from cutter, and part of wall between repair SW comer the Swall wana on to farther tomake the wall normal - at NE corner 1D': boot were all togethe Letermined to leave the corners

(by memory) from the side of the grotto. I observed in two places in the well inserted stones of two small blocks (like those in the steining) put in to make a better step, in the stepped part between the vertical & the grotto. These <much> smaller inserted stones, as well as the small size of the steining blocks of the grotto, all point to the well having been cut (& made with care) through the masonry, after building the Δ . The irregularities of it, & thin pieces of stones left on the side, had convinced me of this long before. I had enough of it, going twice down the well to day; & have got a stuffy cold in the head from the dust. The hole on E. side Δ was enlarged E. ward, having been made too near Δ ; &, to my great disappointment, the paving which was found, stopped short broken away some 1 ¹/₂ or 2 ft inside the line of the casing, so no alignment could be found. There is no other place on this side that I think worth the labour of another shaft. The new shaft on S. side was continued. These shafts near the middle, but not in deepest rubbish, cost 5</-> or 10/- each; but from what I have seen, it is about 10 or 20 to 1 against finding casing worth having in them; so I do not think of doing any more now on Δ^1 after this new S. hole is finished.

Three parties continued work on the walls by Δ^2 to clear up their character: the only find was two curious little rhombi pieces of stone, apparently sawn waste from cutting casing [R] [side R top]. Two men cleared part of wall between $\Delta^2 & \Delta^3$; finding that Δ^2 had a complete square <of wall> at SW corner, & the S. wall was afterwards pieced on to farther, to make the wall round Δ^3 . Four men & two boys were all together at NE corner of Δ^3 : profiting by experience on $\Delta^1 & \Delta^2$, I determined to leave the <u>corners</u> of Δ^3 alone,

I such a like about 20 ft from corner on ENE, pass courses of carring + reaching paving und the from is nor Luca hand with fallen car got through it to day It was a do whe de several showers . Such Delayer work as the trabs ca met yow Tuesday 22 Kar . Over high ind all day, rather showers. It was too cold & toring topart men on the exposed , as I with hardly stand sometimes in had places, + the Daw) ; to that to select special work for to day. That , + fait less inclued + all from yester boy than anything else; so I put unterthem + thick trousers , & them for m for work Tome was second y on N face & for par it, but very anomalony, this ising to follow it up. Also look on E side closer to D then befor, but no sty for smooth roch all the way with plaster on it out unty tothe trenches , appr Hole on Sside A' found er casing all gone by were make mounts SAtter De by out the wall nother mounts the stratified abangh of A ; I some but of potting were than the Stren; begun, teing more sheltered carly thing go far, bing chicked by the huge Hocky of grante carrie Such he resting on on another almost every when the Dawd; so fresh lules had to be begun. Anthen 350 they got

& sunk a hole about 20ft from corner on ENE, passing <the sides of> two courses of casing & reaching paving underneath it. On NNE the ground is more encumbered with fallen casing, & we could not get through it to day. It was a clo cold day with wind, & several showers; which delayed work, as the Arabs cannot stand wet & cold.

Tuesday 22 Nov.

A very high <WNW to NW> wind all day, rather cold, & some showers. It was too cold & too windy to put men on the exposed parts, as I would hardly stand sometimes in bad places, & the sand filled the air; so I had to select special work for to day. I had a sore throat & cold from yesterday, & felt less inclined to go out in a high wind than anything else: so I put on two coats, a blanket under them, & thick trousers, & thus got on pretty well. The work done was searching on N. face Δ^1 for paving edge, found it, but very anomalous, & too windy to follow it up. Also looking on E side closer to Δ than before, but no edge found; only smooth rock all the way with plaster on it, shewing that some paving went a long way out, apparently to the trenches.

Hole on S. side Δ^1 carried to 2ft from paving. New hole NNW Δ^2 found edge of paving under <which supported> granite; external paving & casing all gone. Two cuts were made in the immense rubbish mounds S of the Δ^2 , beyond the wall on that side: they shew the mounds to be stratified at angle of tip [\Re] like mounds of Δ^1 ; & some bits of pottery were found. The SE corner of Δ^3 was begun, being more sheltered than the others: but on neither side could they go far, being checked by the huge blocks of granite casing, which lie resting on one another everywhere under the sand; so fresh holes had to be begun. On the SSE they got

grown Scep, but all the paring was gone, I may inseque blocks of stone left lying about ; which I've why have as they were certainly unto paving wednesday 23 Nor & still, fine day to work went and by 72 to 102: and for 11= to 52 ; at NNE the 23, where a large + helping book douce was cleaning NE tranche my little & all work there 5 m & at squatting as sit close by NE corner a stalking unlimitedy in clea ly Jone 1 at NNW; this su raised bat not the full 20 ma neeve the cra place; these holes in NW ofthen A The g hat well squins # 83 m long ston logan End Jeach gallery thus verynegolar when your all the walls I much can be made of the thelevers. It SSE whe was a bandond as the only offerinty warlake place

down deep, but all the paving was gone, & only irregular blocks of stone left lying about; which I did not go have moved, as they were certainly under paving level.

Wednesday 23 Nov

A still, fine day; so work went on.

Out by 7 $\frac{1}{2}$ to 10 $\frac{1}{2}$: and from 11 $\frac{1}{2}$ to 5 $\frac{1}{2}$: principally occupied watching & helping at NNE hole Δ^3 , where a large block had to be raised. Work done was cleaning NE trenches Δ^1 ; the men did very little, & all work there is very slow as a lot of Δ Arabs always sit close by NE corner, & get squatting all round the workmen & talking unlimitedly. Deepening & evidencing S. hole Δ^1 which is very nearly done. Finishing clearing the sub-granite paving of Δ^2 at NNW; this sub granite paving is always recognizable from being raised somewhat above rock or paving outside of it, but not the full 20 ins or so of paving thickness; also by being <raised> in a straight line parallel to Δ^2 side; & by having in many places small square holes cut in the edge of it <apparently> to receive the crabs which held the casing blocks in lowering them into place: these holes are about 4 to 6 ins long about 4 wide & 3 deep. The galleries NW of this Δ were cleared more, shewing that they <each> ended with a larger block of masonry of well squared stones; the block being a little wider than the wall $[\Re]$ & 83 ins long (4 cubits) by 74? wide. There was also a broad stone threshold to the doorway at the end of each gallery, thus [\Re door]. The distances & widths of the walls are very regular, not varying over an inch, by a rough measure I made: but as all the walls have a good deal of batter, nothing much can be made of the thickness. At Δ^3 the SSE hole was abandoned as the only apparently available place

proved the desked with block fearing. Un ESE luch way & romulationtinued. In NNE list was worked at hand all day but two blocks were let slip, one narrows the lake, other fell into it ; & when I came up they were just trying by we had a hard the hours work, wilt servebas going to lifted about a foor + topedown toone site ; the mi they wast a lot of force by lifting refricent in profer with in trusting to something to Tops Inon & keep the block plants to to in keeping & well up, so as to to secure severy quarter inch of left : also they mener abell, but go on at whatever seems consist or most the time, requirdless of which may be required, this is a great wash, particularly in shaft, where they will go on sinking until the loose stuff over them is fright - full, & then be dearit, littley a lot go tom theeding to clear it out instead of finishing each food of it completely as they go som In faid they need continual suferinten tana, y they compl to being able to be any measuring ; I tried to do some assuring . NE trendres, bit the A trabs kept up such an incessant your of talking that Sworth scarcely get on. Thursday 24 Nov putty 74 till 10 2/4. Bach for bath the breakfast. Just as that I one ariz, the came soge To I went of stored his f that was grant was come. ta party, mainly formans; two pastors, wife form, two deaconing mail, they him Schultz Jessie this muchan. To that helfer & arrange them & hunch arrange some chat the f. a little, Alten went of to the men. They much as with them, but shar just had breakfast & Therew Ali would be bursing about them for certain, & so the men would be left altogether. Twas fally simply , & wild us get back til

proved to be choked with blocks of casing. The ESE hole was somewhat continued. The NNE hole was worked at hard all day, but two blocks were let slip, one narrowed the hole, & the other fell into it; & when I came up they were just trying to get it up: we had a hard two hours work, with 3 crow bars going, to get it lifted about a foot & tipped over to one side; the Arabs are deficient in proper wedging, they waste a lot of force by lifting & letting fall again, trusting to something to drop down & keep the block from returning; so I had plenty to do in keeping it well wedged up, so as to en secure every quarter inch of lift: also they never plan at all, but go on at whatever seems easiest or most urgent at the time, regardless of what may be required. This is a great waste, particularly in shafts, where they will go on sinking until the loose stuff over them is fright-full, & then begin to clear it, letting a lot go down & needing to clear it out again; instead of finishing each foot of it completely as they go down. In fact they need continual superintendence. & this completely prevents being able to do any measuring: I tried to do some measuring of NE trenches, but the Δ Arabs kept up such an incessant row of talking that I could scarcely get on.

Thursday 24 Nov

Out by 7 ¼, till 10 ¾. Back for bath & breakfast. Just as I had done at 12, Ali came saying that M^{IS} Grant was come. So I went up & found Mrs G & a party, mainly Germans; two pastors, wife of one, two deaconess, two maids, & M^{IS} Miss Schultz, Jessie, & Miss Maclean. So I had some chat to M^{IS} G. Helped to arrange their di lunch arrangements a little, & then went off to the men. They much asked me to lunch with them, but I had just had breakfast, & I knew Ali would be buzzing about them for certain, & so the men would be left altogether. I was fully employed, & would not get back till

5 where down just in time to say good by a they or over g. presend me, as she had down bifore, to come in for chiris tothim, but Isaid that the per the up the by thim. Un Som to day was finding edge Mawcunt at . 575 outfrom pochet, but farther out appeneibly on W such hole A the caring is most airious weathered Abroken thug - on finding the bottom edge disas quite deceive until flocked up 'toaw the hollow. then a breaking more rubbech we un covered the neurons hyper up of the true This renders it possible that what that for eye very ill define this sale in the other whe might be a weathing & broken under part; this with he decided by fixing this piece in the survey . I should the to chear more, but the whe is in such a very touchy state that I to when how much a titth Enlagging might sutall the slightest track bring down stores from parts of the side, the one anyroes will work it. He galliers to W J D2 were de at the E and the how far they setend, & there formattern by our where any plan shew them. Also the southorner out Attem was cleaned, tohew it suid. Aloro some parts fralls ∆3 were cleaned. The NNE ≠ ENE, + ESE, all have today unwenter with SSE SSW TWAW When, at SSE caring was formed & cleaned up. I do not see any mare practicable points to clean the coccing here, & toom of break up, + take outpiece and blocks the the granite in order to get down. & block Minietime is fail. it delight, as it can be senashed Afeulled out ; they susaring a clear liste. The Danger here is not from the defits of the lades in such velocity to falling presed, but from the drang lying on the sand , so that if the and begins the block must fall in ; in fact is a case funstable Equilibrium, or only a small margin fstability; talkat

5, where I was just in time to say good bye as they drove off. M^{IS} G. pressed me, as she had done before, to come in for Christmas to them, but I said that I hoped to be up Nile by then. The work done to day was finding edge of pavement at .515 out from SW socket, but farther out apparently on W side. Finishing new S. hole Δ^1 ; the casing is most curiously weathered & broken, thus $[\mathbb{R}]$ so that, on finding the bottom edge I was quite deceived, until I looked up & saw the hollow; then on breaking away more rubbish we uncovered the remains higher up of the true edge. <face.> This renders it possible that what I took for edge very ill defined on this side in the other hole, might be a weathered & broken under part; this is d/<will> be decided by fixing this piece in the survey. I should like to clear more, but the hole is in such a very touchy state that I do not know how much a little enlarging might entail; the slightest touch brings down stones from parts of the sides, & no one but negroes will work it. The galleries be W of Δ^2 were cleared at the E end to see how far they extend, & I have found them beyond where any plan shews them. Also the southernmost & last of them was cleared, to shew its end. Also some parts of walls around Δ^3 were cleared. The NNE, & ENE, & ESE < holes at Δ^3 >, all have casing found in situ; to day we <finished ESE &> went on with SSE SSW & WNW holes, at SSE casing was found & cleaned up. I do not see any more practicable points to clean the casing here, & at some of these they have had to break up, & take out piece meal, blocks of the granite in order to get down. A block of limestone is hailed with delight, as it can be smashed and pulled out; thus ensuring a clear hole. The danger here is not from the depth of the holes giving such velocity to fallen pieces, but from the huge blocks of casing lying on the sand; so that if the sand begins to run the block must fall in; in fact it is a case of unstable equilibrium, or only a small margin of stability; & what

need most attention, which brack never give is to are wedges between the blocks around a hale, so that they shall rest one against the other, such tend to fall in. Friday 25 Nov. Out by 7 4 your round directorymental 11. In toreabfast. and again at 2, round the men, other by 4 back to NE corner 1 D' to small trenches with this; chained a plan of them, only needing angles from NE Elation to five position. he by Sask to suffer . menting four Anab hoes ; thave generally some of them to mend almost every night, the handles get broken orthe weaper split or lost. at suffer a tortrachell cat camein very tame & vore cross; + soon a ginger sprally vore com, but wild, also boked in ; tortorseshell would cat ship bis wit, cheese sind & tomatoe shins : for Unhanned had torought up a bashet of tornations, the first of the season have, the having sent him toget some; & dwas having an orthodox steer of tomators soup, cheese, ybis cuit. I way glas the cat come in, for has been lively for weeks here , I their being about may keep bith rate tonaher away. It is curring, but I am assund true by this that cats will kill sucher whenever they have a chance, though they To moreat them. I saw to day in the byging what Itoh for a small make at first, a shing round worm with plain ends, i.e. a rounded brown head stail; it had a manuellous heach of zinking into the ground in mediately, + I saw it was really a lizand with very small legs, made on purpose for hiding in the said. He work done to day was, searding for comen Mancement at SW ND, finding it your on S. site but non on W. get. Walls W 1 Dr clience farther. WNW hole D3 abandoned, a big grainte bloch to covering all the bottom. Sow hole A' continued, after smashing a bloch of granite. walls S. of A" meavered farther : the Eard is all of fine white sprand moleatter

needs most attention, which Arabs never give, is to arrange wedges between the blocks around a hole, so that they shall rest on against the other, & not tend to fall in.

Friday 25 Nov

Out by 7 ¼ & going round directing men till 11. In to breakfast. Out again at 2, round the men, & then by 4 back to NE corner of Δ^1 to small trenches with Ali: chained a plan of theme, only needing angles from NE station to fix position. In by dark to supper. Mending four Arab hoes; I have generally some of them to mend almost every night, the handles get broken or the wedges split or lost. At supper a tortoiseshell cat came in, very tame & voracious; & soon a ginger equally voracious, but wild, also looked in; tortoiseshell would eat ship biscuit, & delighted in cheese rind & tomato skins: for Muhammad had brought up a basket of tomatoes, the first of the season here, Ali having sent him to get some; & I was having an orthodox stew of tomatoes, soup, cheese, & biscuit. I was glad to see cats come in, for a rat has been lively for weeks here, & their being about may keep both rats & snakes away. It is curious, but I am assured true by Ali, that cats will kill snakes whenever they have a chance, though they do not eat them. I saw to day in the digging what I took for a small snake at first, a shiny round worm with plain ends, i.e. a rounded brown head & tail; it had a marvellous knack of sinking into the ground immediately, & I saw it was really a lizard with very small legs, made on purpose for hiding in the sand. The work done today was, searching for corner of pavement at SW of Δ^1 , finding it again on S. side but none on W. yet. Walls W of Δ^2 cleared farther. WNW hole Δ^3 abandoned, a big granite block fa covering all the bottom. SSW hole Δ^3 continued, after smashing a block of granite. Walls of S. of Δ^2 uncovered farther: the E end is all of fine white squared Mokattam

like the touls with rounded Jean], but fine 10 ft thick bart with still in the Other plastind. Walls W. of A the. Wally SAA were begin on , find -built rough ston wall off thick running into a long which man cover a building. after breakfast isafter for fixing distance Attend. from working out the three measured fromt one the rod. setting me watching the sand in turned over thoor cleans Except potting derival & bone ilu Roman cet it was within fthe floor, with 3 or 4 ft of paid own it so suppose it to be later than A times; prouse theft breakfast av I (that some bis with out) The I wont up to A NE traches & took anyles to points in the su und all the men, for . then ally I went & close works here nearly all that present, There or meaning levelling, te up Mh; V. it's un possible leave aten on has continually to where after socievate strady conver was dearing at SW proch cattery only about 500 in from socket . Filling truches NE S, forthe noad again. Jusin galling by D' + training junction of W + Nwalls of A

like the tombs, with rounded faces [\Re], but fine joints; & in all 10 ft thick. Other parts, W of the shift in the line, are of good rough stone plastered. Walls W. Of Δ^3 were also examined farther. Walls S of Δ^3 were begun on, finding one a well--built rough stone wall 8 ft thick, running into a large mound which may cover a building. After breakfast & supper working out formula for fixing distance of theod. from a rod placed skew to it, by two three measured points on the rod.

Saturday 26 Nov

Out by 7 ¹/₂, setting men to work; & then for two <or three> hours or so looking watching the sand in bottom of one of the galleries W. of Δ^2 being turned one over & floor cleared: no remains of any sort were found except pottery charcoal & bones in a heap of rubbish lying mixed with blocks of granite: the pottery is str much like Roman, yet it was within a foot or two of the floor, with 3 or 4 ft of sand over it, so I can hardly suppose it to be later than Δ times; of course I kept most of it. Then after breakfast at 1 (I had some biscuits while out) & I went up to Δ^1 NE trenches & took angles to points in the survey of them. Then at 4 I went round all the men, finishing by sunset; then paid them all off, & close works here for the present. I have done nearly all that I intended, & I must now take a fortnight for measuring, levelling, &c, before I leave for going up Nile; & it is impossible to do accurate work steadily when one has continually to look after excavations.

The work done to day was clearing at SW of Δ^1 & finding corner of rock cutting, only about 50 ins from socket. Filling in all the trenches NE of Δ^1 , for the road again. Turning over sand Ψ in gallery by Δ^2 & tracing junction of W & N walls of Δ^2 . Clearing

Aturall S of D2; it proves not to go drun thing to all the , but the built on it as a sort of ton Each sur. wall W. AD3, X SMA : 10 men c mish it off. Un carry was found & decare Justerday in lite SSW D3 due other place is practicable The total cost forothmen has been \$ 17-6-0, 9 \$ 3-10-0 to the useless brusen man ; & I think we have got felent for the money ; for a resume fit all see the suclosed teller to the teadening; the total opholes seend in 85 for quest Branis yourrowed ways (including 6 due shafts) 100 for D all it walls; + 91 for A3 & its walls. Sunday 27 Nov Tim that them got slight pharging as that last seeson; yet made me very lazy, & Similined , or do anything . Ofter newing a little in went out for a stade I then in your, but add was suf fit for support, I tobed, happy the able to the lairs The accompanying letter for publication hvish to go to as they were eived about tube drills; it is benirall because people along have amisity about at the time, but not so much if they have been ago ; also some notice get may there is aff it is a good opportunit to stightly mention also more feel certain about, that the casing is less than s Hunde such a fact ought not the helpt back in order to state it completily some months orycans hance. It is well

more of the wall S of Δ^2 ; it proves not to go down through all the high heap of rubbish apparently, but to be built on it as a sort of crest with a pavement on each side; [N \Re S] the dotted line shewing present outline.

Clearing corners of walls W. of Δ^3 , & S of Δ^3 : 10 men were on this in order to finish it off. The casing was found & cleaned yesterday in hole SSW Δ^3 , & no other place is practicable.

After The total cost of workmen has been £17-6-0. & £3-18-0 to the useless Museum man; & I think we have got plenty done for the money; for a <u>resumé</u> of it all, see the enclosed letter to the Academy; the total of holes sunk is 85 for Great Pyramid & surroundings, (including 6 deep shafts,) 108 for Δ^2 & all its walls; & 91 for Δ^3 , & its walls.

Cairo– <u>10.</u>

Sunday 27 Nov

Find that I have got slight pharyngitis,

as I had least season; & it made me very lazy, & disinclined to think, move, or do anything. After reading a little in morn & having a dozen, I went out for a stroll for three hours, & then in again, but could was not fit for anything. Had supper, & to bed, hoping to be able to go to Cairo tomorrow.

The accompanying letter for publication I wish to go to "Academy", as they were civil about tube drills; it is desirable to publish now because people always have curiosity about excavations <u>at the time</u>, but not so much if they have been made months ago; also some notice of it may otherwise appear somehow; also it is a good opportunity to slightly mention, what we may now feel certain about, that the casing is less than supposed; & I think such a fact ought not to be kept back in order to state it perfectly completely some months or years hence. It is well [missing] that [missing] are now quite

monday 28 Now off before & to Cairo . bent to Post of ound the bill of lading for box seaffrom Honghton on 12th Nov, though Sater 2" Nor went to station tree if I had been sent on , but I course it was mot there they said it could not be nec? till bill had been neck in flex " . Haighton had also direction it to J. Petre La Degana instead porte Restants as that tol him ; & Sway have trouble about the box being I, I do not a ball understand his delay Amisdirection. In any case I cannot get the plate for another week ; and I had thought that a month was long swough already for transet. Then to Beach & Drew \$ 10. met there an machensie, who had just arrived I was at Shiphiands. Then went to see we dopter . Had a long talk with him on and they have beended on having a bragoman, many because they through Nubice. We hofter the got had gone of thook at data we alles has not come get but a supected very soon; 9 w. L. well gettime to come out of helping here as soon as he can, Espect the offin about a fortinght, my likely a little low very glad theme the sphortunty fruch a farty to go with , as not once in theme of our years is such a trip - work trotmen sight seeing ; + gette to halt well be considered better worth which than ush inscriptions te in any that are already known ; to far the plan sxactly counsides with my own wishes. He bought a log of things of this that I took him to bole at a he much chefolmen vare, as also did & wiedenanne who saw it. then I left, went that Dimer, bought fruit, then to De frank. He had not Simmer so Iwaiter. When bawhim he asked show I any buins , & reproved me for ubcoming to Drive welth him, syn that Lought too so whenever tway not with Atres friends the ver, worded & Jussie theme Schultz. Jus G. Who was was working over some Searabs of Sulemans, whim he treated

Monday 28 Nov

Off before 8 to Cairo. Went to Post, & found the bill of lading for box sent from Houghton on 12th Nov, though dated 2nd Nov; went to station to see if it had been sent on, but of course it was not there & they said it could not be rec^{d} till bill had been rec^d in Alex^r. Houghton had also directed it to J. Petrie La Dagana instead of Poste Restante as I had told him; & I may have trouble about the box being J. I do not at all understand his delay & misdirection. In any case I cannot get the plates for another week; and I had thought that a month was long enough already for transit. Then to Bank & drew £10. Met there M^I Mackenzie, who had just arrived, & was at Shepheards. Then went to see M^r Loftie. Had a long talk with him on arrangements; they have decided on having a dragoman, mainly because they are going through Nubia. M^{IS} Loftie & Miss Gott had gone off to look at dahabiyehs. M^I Ellis has not come yet, but is expected very soon; & M^I L. will get him to come out & help me here as soon as he can. They expect to be off in about a fortnight, very likely a little longer. I am very glad to have the opportunity of such a party to go with, as probably not once in three or four years is such a trip arranged; they intend to halt for work & not mere sightseeing; & getting fresh inscriptions, &c, will be considered better worth while, than seeing any that are already known; so far the plan exactly coincides with my own wishes. He bought a lot of things of Ali's that I took him to look at, & he much admired the bit of Chephren vase, as also did D^r Wiedemann who saw it. Then I left, went & had dinner, bought fruit, & then to Dr Grant. He had not done dinner, so I waited. When I saw him he asked where I had had my dinner, & reproved me for not coming to dine with him, saying that I ought to do so, whenever I was not with other friends. Also saw M^{IS} G. who was very cordial, & Jessie & Miss Schultz. The D^I was looking over some scarabs of Suleiman's, whom he treated very

uncercenomously; paying half furhat he asked, pretty the sea in the drawer, stilling him that was plenty for theme. Had some talk over various matter of A. Ve. Then Sleft about 3: sporte back. branges are now bakening for and penny for large mandarins, so I'mdaly in 48 - getting through a dozen on more outer noad. I find that I unterestimate the distan blairs, it is really quiles to under of Esbebigen; so Igo 18 miles beside going about cains for 2 units, when I go to post a letter or necesive one. I your go wer delighted with the Children fragment, + showed it Dilignibly to huis schult + unin quis In had an offer figuing as a companion of the Wile, Ausoilly which have liked it; only the lady was a Viennese prime doma, whose such we when with certainty ; I have him m. , with her sweetly suroth gray hair , was afraid formible shocks the feelings . Tuesday Nov 29 aut by give after breakfast to A3 fixed place of caring on pourte at sw, & two points on the roth anise dearing, the carried down by calculation afterwards. mafer for accuracy taking tout of the finished contacted for which are visible on all the blocks, instead of the rough and res which is all I can see at the bottom on the powerunt : the store on infor courses on the the contact core towhich the flock was intended to be dressed form and really the most important; the growats likes being to shew What the hight of the carry is all round of Then at SE in prestimaty, how for the casup Extend I then at NE first a boomt on 3° course & two at base . ase + Ion strouver. Lisis two points ar 6 all the Sx caratures , I I only have to take the visible caring of the NW. The method I want defend on points in holes, invisible from the survey station ne another,

unceremoniously; paying half of what he asked, putting the scarabs in his <a> drawer, & telling him that was plenty for them. Had some talk over various matters of Δ , &c. Then I left about 3 ½ & rode back. Oranges are now 6 a penny for ordinary, & 3 a penny for large mandarins, so I indulged in 48: getting through a dozen or more on the road. I find that I underestimated the distance to Cairo, it is really 9 miles to middle of Esbekiyeh; so I go 18 miles, beside going about Cairo 1 or 2 miles, whenever I go to post a letter or receive one. D^r & M^{TS} G were delighted with the Chephren fragment, & shewed it diligently to Miss Shultz & Miss Mullock. Miss M. had an offer of going as a companion up the Nile, & would much have liked it; only the lady was a Viennese <u>prima donna</u>, whose suite was not known with certainty; & dear Miss M. with her sweetly smooth grey hair, was afraid of possible shocks to her feelings.

Tuesday Nov 29

Out by 9 $\frac{1}{4}$ after breakfast to Δ^3 ; there

fixed place of casing on pav^t at SW, & two points on the 4th course of casing, to be carried down by calculation afterwards. I really prefer for accuracy taking points of the finished <u>contact-edges</u> which are visible on all the blocks <where exposed>, instead of the rough undressed outside which is all I can see at the bottom on the pavement: hence the obs^{ns} on upper courses on the top contact edge <(definite to \pm .1 or .2)> [\Re] to which the block was intended to be dressed down, are really the most important; the excavated holes being to shew what the height of the casing is all round; & roughly, yet unquestionably, how far the casing extended. Then at SE I fixed a point on 3rd course, & two at base. Then at NE I fixed two points at base & 1 on 1st course. These compromise all the excavations, & I only have <now> to take the visible casing at the NW. The method I now depend on for fixing points in holes, invisible form the survey station near them,

or in fact all points within 3 or you ins of a station, is to lay a 140 met rod across the will, ordy a planbling 10 inch divanter voo (sticking the thread on with wax which invaluable for plumblines) any lotene into the hole; fig the pland by observing a simulto from star & azimattes of each side of plante, the group 60 m 70 m on horisontally; then measure of from plumb in the his in these lines, that these & points occupied as attenthe ; some places being so cumbered with " blocks grante that that tould pellars so as to see them; my sort of desoct measurement guite impracticable , withing but a third. would do it . Itid I could, as the h then A' to day, as soon as Jown . & of the sand nam und would Drop in , & tot in the Dusk to support which ran thus : Stew Quinces & ship bigenit. in which the rettle boils Atter con plack esfec very sweet w with s with a Bananas newby toes, sentime upa desh. of bort - a chuchen leg, they ture . last it Join, I lift tector for a minister, when Theread a counching , thou Tortomolelle her jumper up & serged it; so I charged her

or in fact <for> all points written 3 or 400 ins of a station, is to lay a 140 inch rod across the hole, drop a plumb line from a 10 inch div<ⁿ> on the rod (sticking the thread on with wax, which is invaluable for plumblines) anywhere into the hole; fix the plumb by observing azimuth from staⁿ, & azimuths of divisions on rod 60 or 70 ins on each side of plumb, this giving distance horizontally; then measure off from plumb to points down There was so much arrangement of plumb in the hole. lines in these holes, that these 8 points occupied as many hours altogether; some places being so cumbered with fallen stones blocks of granite, that I had to build pillars to support the rods so as to see them; any sort of direct measurement was quite impractical, nothing but a theod. would do it. I did this Δ^3 to day, as soon as I could, as the holes were very precarious, sand running down; & if the sand ran too much the big blocks around would drop in, & blo choke the hole again. Then back in the dusk for supper, which ran thus:-

Stewed Quinces & ship biscuit.

An interval, in which the kettle boils, & the company assist in making a plough.

Black coffee very sweet, with ship biscuit. Stewed tomatoes, with ship biscuit.

An interval for washing up.

Coffee as before, with mixed biscuits, & journal. Bananas.

Oranges.

Ali, as he not unfrequently does, sent me up a dish; of boiled crushed maize (?) & a chicken leg, this time. I set it down, & left if it unprotected for a minute, when I heard a crunching, & found that <u>tortoiseshell</u> had jumped up & seized it; so I caught her

& after a sound banging all over turned her out this will sud over acquaintainer for the time at least . That already come tithe conclusion that the remety was worse than the disease; + that I was preferable thear are mound abright when all the victures were safe bisent two then to have to secure swerrything all the itable motion is me was at meals : so as une the d lie pussmentral-sed I shall keep beer outsule. I cannot make out the panement of supplace the gree is very rough salo of 3-9in between mor the ground that outside that under grant ushetten tostone outsul is mock one case where findbace it well . this in equility that that uningreat in one c. the side of bottom course store is report, the boes not new down to grow , thens hence & never could be trans to a sharp cope abbottom: the stores very in height, & some go down a foot or 20 But as most ofthe the sur of their shipe and only 4400 high them would with height sussigh the over the present basing this SUNT (1) to caring is infinished very for ; hence bhat if the powement min much state

& after a sound banging all over, turned her out: this will end our acquaintance, for the time at least. I had already come to the conclusion that the remedy was worse than the disease; & that it was preferable to hear a rat running round at night, when all the victuals were safe in the biscuit tins, than to have to secure everything all the time one was at meals; so as now the charitable motion is neutralized, I shall keep biss outside. i:e puss I cannot make out the pavement of Δ^3 ; the stone outside basalt[?] the granite is very rough; it has frequently (or always?) A wide gap of 3-9 ins between the stones under the granite & that outside, yet not a regular gap; the stone outside is rock <of Gizeh> & that under granite Mokattam, in one case where I could see it well; the stone outside is higher irregularly that that under granite in one case: in a case where the side of bottom course stone is exposed, the finished edge-line does not run down to ground, thus $[\Re]$ hence the stone never could be trimmed to a sharp edge at bottom: also the stones vary in height, & some go down a foot or so under the end of their slope $[\mathcal{R}]$. But as most of the stones are only 44.6 high, there would not be height enough to lay a paving over the present basing thus $[\Re]$. But there can be no question that the casing is unfinished, never <trimmed or> polished down except in parts; hence what if the pavement has never been laid? I think the present state $[\Re]$ was to be finished thus $[\Re]$ making it just like Δ^2 .

Wednesday Nor 30 after breakfast out by 10 to NWO de difficulty in amonging to see plumblines There I had no abter comer, be had to cut through heles your the station ye stores , & then build killars to suffert the Haffily the lines the tosee them h sum to the base sides the seal destance , X so fixing that , & Aver sufficient. It last I got them amongo frany on NVW; also 3 fouts of rock the alyrus savement, about 57 8 from casing (25 x Then carefully planned all the details offices, Inafted lines, or , in order tree (after calculation) what of relably council with eye fear that Iwas wants, youry hD frank tem coming own. Hewas going to shew him the painties touts in the after N.W. Twent + by an lothing at N.E. il come up, so ypacked up, toout the Expland Letail timscriptions of the paintis te: + if his trip lasts over neet summer The to England title the summer of 183. Then tout, alculate some of the the Asing had my various, the but abt 11. I cleaned the carsing stone, of turned suggest nearly april to as to get my eyes some to see the roch and it. there is raised stip in roch, about 1.3 57.9, on Nich carring hay stood

Wednesday Nov 30

After breakfast out by 10 to NW of Δ^2 .

There I had much difficulty in arranging to see plumb lines over holes, from the station at the corner. We had to cut through rubbish, move large stones, & then build pillars to support the rods high enough to see them. Happily the lines of sight being very nearly parallel to the base sides, the exact distance of the rods from theod. <(about 80 ft)> is immaterial, & so fixing that by sub-tension is sufficient. At last I got them arranged, & observed in thus, the alignment of casing on N & W; also 3 points of rock cutting supposed edge of pavement, about 578 from casing (25 x 20.72). Then carefully planned all the details of holes, drafted lines, &c, on the socket floor, in order to see (after calculation) what f details of the rock dressing probably coincide with edge of casing. During this I was told that I was wanted, & going to Δ^1 found M^r Mackenzie coming down. He was going to granite temple, &c. so I agreed to shew him the painted tombs in the afternoon. Having done N.W. I went & began looking at N.E. when about $2\frac{1}{2} M^{I} M$. came up, so I packed up, & sent things down to tomb, & then explained details and inscriptions of the painted tombs to him till dusk. He has been in London, in August I think, but was so engaged with business that he could not take a day for Bromley. He is now on his way to China, Japan, Australia &c; & if his trip lasts over next summer, he will not return to England till the summer of /83. Then back to tomb, calculated some of the dis obs^{ns}, had supper; reading up various, & to bed abt 11.

Thursday Dec 1

Out after breakfast to Δ^2 SW corner. There

I cleaned the casing stone, & turned myself nearly upside down <in a deep narrow hole> so as to get my eyes down to see the rock under it: there is a slight raised step in rock, about 1.3 to 1.9, on which casing has stood.

This carring store has been shipted out a little on one side skeen but not on other apprently ; the least destance I would find, by cleaning grap between its back the roch step belied it, was 111. so it caund have have moved out une that, on that Afrobably not as much. He bettom jace fit is not vertual but at go slipe, making 1.6 m difference in alignment; but the top fat is actandy the right thing. Strange to any there is a + SSE between basement + pavermat 5°; + at ESE 11°, This prevents prevents the al At basement underthe caring, sherving the Exactcore fearing ; as the angle is variable, the defile of after casing is also variable, Johnald and I'r, Isay ± 1, for a eneral allowance for it. After finishing fixing the sand place + alignment often caring by two plumbs 35 un apart along its edge) I then went #SE corner. There found that the found reen outside the deep link we day last berrow, I delivered a stone 40 ms higher, of them wetter bus morface Hound the croner of the alignment, mashed by a raised edge groch as at sw wehet. So Ified the two alignments found in ESE & SSE Halso the corner . Then revoved caring found in new lister 5 of D', the coming back from 200 to bring the roots with him which Muchalp signals; Swas so busy with the seguels that I never watched him, the dropped some into the lish of sis Maveunt of S', to clean it meanswhile; Jo ubsection, twent up a such A thode & them down to my tout them up ayour, + at lest sight the now bring on the ; he had concluded that prouse Island see the rods at fround first ; thus 20 min, or so was weather & there was no light to while in water advate 13 2719 in which carries have stood

This casing stone has been shifted out a little on one side, skew, but not on other apparently; the least distance I could find, by clearing gap between its back & the rock step behind it, was 1.1; so it cannot have been moved out more than that on that side, & probably not as much. The bottom face < foot> of it $[\Re]$ is not vertical, but at 9° slope, making 1.6 ins difference in alignment; but the top of it is certainly the right thing. Strange to say that there is a similar slope at SSE between basement <on which granite stood> & pavement; there being 5°; & at ESE 11°. This peculiarity prevents the alignment of the basement under the casing, shewing the exact place of edge of casing; as the angle is variable, & the depth of the foot of the casing is also variable. I should add 1 $\frac{1}{2}$, & say \pm 1, for a general allowance for it. After finishing fixing the exact place & alignment of this casing, (by two plumbs 35 ins apart along its edge,) I then went to E SE corner. There I found that the alignments found ran outside the deep hole we dug last season; so I cleared a stone 40 ins higher, & there within 6 ins of surface I found the corner of the alignments, marked by a raised edge of rock as at SW socket. So I fixed the two alignments found on ESE & SSE & also the corner. Then moved on to do the casing found in new hole S of Δ^1 ; Ali coming back from dinner I told to bring the rods with him while I put up signals; I was so busy with the signals that I never watched him, & he dropped down into the hole of SW of pavement of Δ^1 , to clear it meanwhile; I did not see him, & went up a small Δ to look, & then down to my tomb, then up again, & at last sighted the rods lying on the ground; he had concluded that of course I should see the rods at first: thus 20 min $\langle \text{or } \frac{1}{2} \text{ hr} \rangle$ or so was wasted, & there was no light to

share. It last lost twork, I find the place of the about ± tind; if Have time should like to Do of clos top of the siece feering found on clearing the to com strun all Decay + bornen off majulity; with vari 4 59.4 that noch against 58:8 on N side, I parent from which Since not aball coorn appenently ; & then paverment is this past + 1t course is = 20.5+58.8, or laubit + N. course, this with runch as if paw? level have was a letth amatic been correction by 1st course hight, I make by mugh levelling referring to courses at erriers that this S. par ! was 2.7 too low burthin amust be settly by accurate work when he Ellis Whe Hair mention to min that the standard system in great hidran trangl = was to observe all asimultis, within meter bach to start , then shift circle 7"12 i.e. 50 \$ 360" + take they upain ; 450 yo allowing with 50 shifts + Too warde for sach point . I like the der so much that now when meaning with the sind then, Jalways shift which For \$ \$ 360° at sach set of asimather \$ 10 take 300 ment panti furch; madigs on Each point, at 3004 diffe this neutraling cicle errors, & checking smors Agraduation Itens genuelly get with 4 readys a ± of 4" with the 5 in ch. just as I finished, twas coming very tenderly up the sha is a awfully ticklish in condition one fall coming our me a cre that there were 5 hypenas I gave chese, of got near single the theme stout a bin denot another &

spare. At last I got to work, & fixed the place of the casing to about $\pm \frac{1}{4}$ inch: if I have time I should like to do it closer <(with 10 inch theod)> for on clearing the top of the piece of casing I found the 1st joint in very sharp condition: it is a curious case, the bottom of the stone all decayed, & section thus; the pavement having been pulled out & broken off irregularly; with variable face { **[R**] It is rather anomalous in one point, that height of casing is 59.4 against 58.8 on N side, & pavement from which I measured is not at all worn apparently: & then pavement is only 19.9; thus pav^t & 1st course is = 20.5 & 58.8, or 1 cubit & N. course height; this looks much as if pav^t level here was a little erratic <(.6 too low)> & had been connected by 1st course height. I made by rough levelling referring to courses at corners that this S. pav^t was 2.7 too low; but this must be settled by accurate work when M^r Ellis comes. Col. Haig mentioned to me that the standard system in great Indian trianglⁿ was to observe all azimuths, & then return <reversing> back to start; then shift circle 7° 12' i.e. 1/50 of 360° & take azimuths again; & so go all round circle 50 shifts, & 100 readings for each point. I like the idea so much, that now when I want accuracy with the 5 inch theod, I always shift circle 1/3 or ¼ of 360° at each set of azimuths, & so take 3 or 4 readings on each point, at 3 or 4 different parts of circle; thus neutralizing circle errors, & checking errors of graduation. I thus generally get with 4 readings $a \pm of 4$ " with the 5 inch. Just as I finished, & was coming very tenderly up the shaft, (which is ve awfully ticklish in condition, one fall coming on me while there) Ali gave cry that there were 5 hyenas; so on getting up I gave chase, & got near enough to see them in the

such they were certainly not jackals by size affectance fort prints. The packed of Aback to truch. Reduced some of the readings on not thenhad support , worth this the the ber about 102. Friday Dec 2 After breakfast to & Sw corner ; then fixed various pouls for pavement. Then Examined continuation of part W. There is no treve at 515 farthin w along and; but a rochedge with & blocks sodulpruchattan still comments in place at about 630 from the sole wor that 575 out at comme , pour to sach other, bet both are parallel to 2; at the place when ything at 515, but only all in 630 out there is no trace of an a suroth rock bid, I caunt septem it at all, it needs fits such all aling, or a trench; the Ance. Un I looked rought is about 2 ft average blow su at alignment free S. caring ; by righting a he to sochet abrad site, a metting certain to loins or so; made the new carrier, if continue to it provement, fall 35 ins inside socket line ; this might be 25 formally, but certainly for from sochet line as on E. & W. V.N. sedes . Then found that the mate soles on NYE sides in to N.E. comin of A to be & alymment, were too close to S lutes which their sufficient the usual character puch a lige ment of b a good deal that with the besemant Afranch carry; but a cleaning the sochet) a raised square cover in sunt on SW. + SE and just such with several slopping likes out into it edge to necesive the chitche held the stone, Much fixing it. So I cleaned these the NW; I have for faring edge again on he ; but could use it; fixed the sud of the Noids eye which mus out beyond Singuel, that we mark at that point. Then rough measured basalt paving as a quick for future work. Then in olen Im flamed of their about 9. my thereat an

dusk; they were certainly not jackals by size, appearance, & footprints. Then packed up, & back to tomb. Reduced some of the readings on rods, then had supper; wrote this, &c, & to bed about 10 ½.

Friday Dec 2

After breakfast to Δ^1 SW corner; there fixed various points of edge of pavement. Then examined continuation of pavt W. There is no trace at 575 from socket farther W along side; but a rock edge with a < 2 blocks of Mohattann still cemented in place at about 630 from socket: but neither this edge, nor that 575 out at corner, point to each other, but both are parallel to Δ ; at the place where edge is 630 out there is no trace of anything at 515, but only a smooth rock bed. I cannot explain it at all, it needs many more pits sunk all along, or a trench; the depth is about 2 ft average below surface. Then I looked roughly at alignment of new S. casing; by sighting a long rod to sockets at each side, a method certain to 10 ins or so; this made the new casing, if contained to its pavement, fall 35 ins inside socket line; this might be 25 possibly, but certainly far from socket line, as on E. & W. & N. sides. Then to N.E corner of Δ^2 ; found that the sock edge on N. & E sides in holes, which I had supposed to be Δ alignment, were too close to Δ by a good deal, & had not the usual character of such alignment of the basement of granite casing; but on cleaning the socket I found just such a raised square corner as exists on SW. & SE; with several sloping holes cut into its edge to receive the clutches that held the stone, when fixing it. So I cleaned & measured this. Then to Δ^1 NW; & looked for paving edge again on W; but could not find it; fixed the end of the N side edge, which runs out beyond the diagonal, & has no mark at that point. Then rough measured the basalt paving, as a guide for future work. Then in to supper, & to bed about 9. My throat swollen & inflamed in glands, making me very disinclined to work to day.

Saturday Dec 3 finding my some tirrat still on though Low not peel up to standing about in the win hetter. to to be leviero which hunst do to be 20 Leterund and Douley, & got any breakfast, & then to post, V to land about 92 no order and, & Sent off a curd ashing more to send o it came in has come box atons , so it must be studiat Alex? . "hen I found be Lotte just I yesse Horad In Not 'Had a talk over all writing to without a tarranged - than intended , & it is supposed that them at firsh worldter than Thursday the Unhablely w- elles mu Bulak on mes. or low -Setand having been by a long East in the boat at post, but our tale getting work in healthing the done thus purt cubout be too be Lear that hove starting, I I the us at mal t (supposed sarbut fall) & while b ; so this so certainty to open a to I saw him just hefore I left the Hotel

Saturday Dec 3

Finding my sore throat still on, though better, I did not feel up to standing about in the wind surveying; so determined to get to Cairo, which I must do to day or Monday. So I ordered donkey, & got my breakfast, & then off about 8 1/2. Got into Cairo about 11, to post, & found English letters, but no order for my box. This is very awkward, & I sent off a card asking Moss to send up the box at once: the ship it came in has come & gone again, so it must be stuck at Alex^r. Then I went to Hotel du Nil, & found M^I Loftie just dressing, after doing a batch of early writing. Had a talk over all the necessary details; & arranged to do without my coming into Cairo again. They are now starting rather earlier than intended, & it is supposed that I must join them at Gizeh not later than Thursday, the boat starting from Bulak on Tues. or Wedⁿ. Unhappily M^r Ellis has not yet arrived, having been detained in his sketching business at Gibraltar by a long East wind; & he will not join the boat at first, but overtake it by rail. I am thus quite cut out of getting work in levelling &c done here before starting, & I fear that it may be too hot on my return to work well. However I do not think it is worth while to get a substitute & give up going; or to join later on, & stay here a little longer, as I mainly want to see the things just S. of this, & to have Prof. Sayce's company. He <Prof. S> had been to see Maspero this morn. & M. has promised to join us at Meydoum & try to open the Δ there (supposed earliest of all) b while we are there, & certainly to open a tomb: so this sounds very promising. I saw him <Prof. S.> just before I left the Hotel

at 12 ½.

I then did some shapping, formy have cut, them franks. After some talle we had hunch, & there a left: In C. seems very brish Hum fitter they were going tothe opening of new small hosp Whateley's school buildings. I then went In til to till we L. Atto value of the box of plate undertaken to get theme passed if they har findly in time: I they should not arrive but at leaves they must be sent after us by I then saw mus L. who has some great part of the bus I with we gott ; y heard farther & the cost when a Lean muster for as men in Caino (say by sur corbett, whe up at X man typon is fore time) & brought propose Ishall leave the chegue in Cauro, with Jus gotto nominee, for the balance of the 2/3 nos what know hand over : the remaining 1/3 to be paid at the sud or some if cash should be short. I shall take a small sum, say \$ 10, in cash with me; for fetty separces, antigrature de lousidering all things /thuch it would be best (i.e. much the most ever ement not 1% of mish I should suppose) to send her as before to Bank of Syght (for as Ishall merbe refting must need my personal attendance or sign as Letter of head , p. O. te would) say & 100. voyage up to Thebes do not promise

I then did some shopping, got my hair cut, & then to D^r Grants. After some talk we had lunch, & then after a bit I left; M^{IS} G. seems very brisk & much better; they were going to the opening of a new small hospital in Miss Whateley's school buildings. I then went back to Hotel du Nil to tell M^I L. of the value of the box of plates, as he had kindly undertaken to get them passed if they came to Cairo in time: if they should not arrive before the boat leaves they must be sent after us by train. I then saw M^{IS} L., who has done great part of the business of arrangements with M^I Gott: & heard farther details. $M^{rs}/\langle M^{r} \rangle$ Gott. who is manager, requires $\frac{2}{3}$ of money down; $\langle i.e. \pm 60 \rangle$ or as much as I can muster pro temp., & the rest to be received in Cairo (say by M^r Corbett, who intends running up at X^{mas} to join us for a time) & brought on. For this purpose I shall leave bal cheque in Cairo, with M^r Gott's nominee, for the balance of the ²/₃ ^{rds} beyond what I now hand over: the remaining ¹/₃ to be paid at the end, or sooner if cash should be short. I shall take a small sum, say £10, in cash with me; for petty expences, antiquities, &c. Considering all things I think it would be best (i.e. much the most convenient, with not 1% of risk I should suppose) to send here <as soon as possible>, by remittance as before to Bank of Egypt (for as I shall not be in Cairo, nothing must need my personal attention or signature, as letter of credit, P.O.O. &c would) say £100. If the results of the voyage up to Thebes do not promise that

the nomainder will be sufficiently worth the copien mobable that them would not be much difficulty in a substitute, sitter any travelles there ; or by letter to lauro cotting some one to come up there by steame The parts will consist of two stay at hours there antimities, on artest of two shorts , for we h. well my about much , both f to do writing: Pro Sayce , We Perend, 1 tymber; W. Slis, whenever he Does enqueering; We gott who manages of also up in to captu meller. Then an also bij on at Huber to fill props aged the Percival's Them I left Hotel, got a few more things, porter letters, y note back. I met lapt " meller on the way, Michand fem the Ds, + bright me a letter from we hoftig tetting me some ofthese points ; Wen had suppor, need Pub of. In work this the bed somewhat after 72. Inst the Khedere to day, the third time thave seen him I that a good look as I knew when it was that was ing ; there being no on else bubryself s that point, Hasten honour ya special rec the is an intelligent practical - looking man - most like A'L' Lewis, fair with ir. Un D' to day at dime said to little Jessee brown he like the Dean some day"; "Hows that" said was g. " Why he turns his toes in like the said the or making the tips of his builte those

the remainder will be sufficiently worth the expense, it is probable that there would not be much difficulty in funding a substitute, either away travellers there, or by letter for to Cairo getting some one to come up there by steamer to join. <If the expense of the whole trip is not thought worth while at home, pray say so by return post, & I will arrange for substitute as soon as possible at Thebes.>

The party will consist of two stay-at-homes, there for antiquities, one artist, & two sportsmen, I.E. 1 M^I & 2 M^{IS} Loftie, for M^I L. will not go about much, both from illhealth & needing to do writing: 3 Prof Sayce, 4 M^I Percival, & 5 myself, for antiquities; 6 M^I Ellis, whenever he does come, for sketching & also up in engineering; 7 M^I Gott who manages matters, & 8 a Captⁿ Mellor Meller. Then are also two arranged to join at Thebes to fill Prof Sayce's & M^I Percival's places. Then I left Hotel, got a few more things, posted letters, & rode back. I met Captⁿ Meller on the way, who had been at the Δ s, & brought me a letter from M^I Loftie telling me some of these points. Then had supper, read Pub.Op. &c, wrote this, & to bed somewhat after 12.

I met the Khedive to day, the third time I have seen him, & I had a good look as I knew who it was that was coming: there being no one else by myself saluting at that point, I had the honour of a special recognition in return for my hat coming off. He is an intelligent practical-looking man; most like A. L. Lewis, <but> fair with brown hair. The D^I to day at dinner said to little Jessie "You'll be like the Dean some day": "How's that" said M^{IS} G. "Why he turns his toes in like this" said the D^I, making the tips of his knife & fork

meet in front flim; soon after mentiony that the Deane way to be at the presing of the hospital, we g. said " Jessie does it like to hear pray; you wont go thear him, will you persie No" said ferrer, I don't mind seeing hum turn his toes I don't want to hear him Speaking of the The who detbles in polities were C. said yes she intoying to help her husbands business sand that Sr. His ahere we ahen most Expressive, with his twinkle After a latish breakfast reade . bent form the e for 2 or 3 miles them the depert about a mile from the edge that tothe Rynamics. This with various occupied all the afternoon. moing to the uns in store came to grif. the paraft leasts by the heart, thas been going tomend it first with rimetting, as i - Mare 180/ Tayce here a

meet in front of him; soon after, mentioning that the Dean was to be at the opening of this hospital, M^{IS} G. said "Jessie doesn't like to hear the Dean pray; you wont go & hear him, will you Jessie?" "No", said Jessie, "<u>I don't mind seeing him turn his toes in</u>, but I don't want to hear him pray" !!! Speaking of the American consul's wife, who dabbles in politics, M^{IS} G. said "Yes she's a most devoted wife, in trying to help her husband's business": "Thereby setting – ahem – " said the D^r. His ahem was most expressive, with his twinkle.

Sunday Dec 4

After a late-ish breakfast, reading till noon, & then out for a ramble. Went down the edge of the desert for 2 or 3 miles then westwards to a watershed in the desert about a mile from the edge, & then back along that to the Pyramids. This with various <u>detours</u> & examinations occupied all the afternoon. Then in for supper, but the paraffin stove came to grief, owing to the unsoldering of some parts by the heat, it has been going for some time; & so I had to mend it first with rivetting, as it should have been made originally. After supper, & stoving rice & quinces, & writing this, to bed about 10 ½.

> Monday– I have Prof. Sayce here all day, & he posts this–

11. Cairo-

Dec 5 Aptin brukefast up to baraby pour fixing position fits sides , only the Not Justing thend, on NE L dut, V then along the 2 It about cope roch metting & trale the p sulfisio beneath, Jills with moster Ali Tells that there is always a lager Amokatlan While in through only 300 4 melies thick. Prof: Sayce the pe ter a guiral talk , we P. ~ sat some of Thans Sca to opro, we p they wentfirst latte were much interesto then after a rest at Al m alling . Prof. J. was too much all to be the Kuyo ch: + saw to Queens ch contant to help people up the narrow slop

Monday Dec¹ 5

After breakfast up to basalt paving, & began fixing position of its sides; doing the N & part of E by putting theod. on NE $[\Re]$ of it, & reading on horizontal rods, of which the middle were plumbed over the edge of the pavement, the breadth regularly of the rods giving their distance accurately enough in direction of along the sides of the paving. Of course there is no paving left as the edge, & what I speak of is the rock cut bed of it $[\Re]$; this never has vertical sides, so I had to adopt something, & took the point near the top, but not rounded, as I supposed it probable that the stones bedded pretty closely to the rock, & sloped away somewhat beneath, filled with mortar thus, – [78]. Ali tells me that there is always a layer of Mokattam under the basalt, even though only 3 or 4 inches thick. While doing this up came Prof^I Sayce & M^I Percival; I expected them to day. After a general talk, M^{r} P. went up Δ , & the Prof^{*I*} sat by while I finished the theod. work; looking over & buying some of Omar's scarabs. Then after some walking to & fro, we found M^{I} P. again, & then went inside Δ . They went first of all down to Sub^t Ch^r, & both were much interested in details & points unfinished. Then after a rest at Al Mamoon's hole, we went up to G. Gallery. Prof. S. was too much troubled in his lungs by dust & exertion to be able to go farther; so M^r P. & I went on, & I shewed him King's Ch:, & saw cuts, &c; then back, & we all went to Queen's Ch: Happily the Arabs are quite content to help people up the narrow sloping passages, &

then stop in & galley, & leave theme to conduct the the chambers . I prints out the fire joints , ty in Queenich then we came out, one trung tout that lende After this, then was just time to go down to Sp manite temple, & then the shoft about the inseribut casing for maspers pleasant lively, little man; without any ty ; & appears very companimable. Thear now that they have to get the morning breeze on west, what I must be on board by ge on loct more : to truns I saw the selifice of the moon well to about pading might ; it was meanly total, the light from the edge just about synel to that of projection; I compared them by symmitting, so as to thorow the moon seen with one size Infilter with the Atim, close to getter, Atte Same time this therew the yes out focus so that both light we of informent lyher of agric apprenent size. This plan of forming discs spul in size , by throwing the spe out of focus seems to an very useful for comparisons. Far more euring than the Edifice, was thear the trabs beating toutous kettles, tall sorts Ametal work, Juring the atvance of the shedow. Ithrought I was any India or Africa that they tred to projetan the soil spirit that Dermony the mon, with not sepect it have . (N.B not Aprica, by nation reckoning; the talks of goinght from Africa, as from Europe, or other foreign countries.

there stop in G. Gallery, & leave them to me to conduct to the chambers. I had pointed out the fine joints, &c, in Queen's Ch; then we came out, down to my tomb & had lunch. After this, there was just time to go down to Sphinx & Granite temple, & then they got off about 6: taking the inscribed casing for Maspero. Prof. Sayce is a pleasant, lively, little man; without any pride or pomposity; & appears very companionable. I hear now that they hope to get the morning breeze on Wedⁿ, & that I must be on board by 9 ½ on Wed. morn: so I must see I saw the eclipse of the moon well to about packing. night; it was nearly total, the light from the edge being just about equal to that of Jupiter; I compared them by squinting, so as to throw the moon seen with one eye & Jupiter with the other, close together, at the same time this threw the eyes out of focus so that both lights were discs of unfocussed light of equal apparent size. This plan of forming discs equal in size, by throwing the eye out of focus, seems to me very useful for comparisons. Far more curious than the eclipse, was to hear the Arabs beating tom-toms, kettles, & all sorts of metal work, & firing guns during the advance of the shadow. I thought it was only in India or Africa, that they tried to frighten the evil spirit that is devouring the moon, & did not expect it here. (N.B. this is not Africa, by nation reckoning; Ali talks of going to & coming from Africa, as from Europe or other foreign countries.

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us Day Dec 6. Inflound gland on left side throat I not al all up togoing out so sal writing till 12, I then were packing till 6 - Threat Igeneral State getting war I could hardly cat any thing Not a starting on a con cheerful look out then supper on tomatoes stapiona it boking at the reclipse Ittemt To my ť

Tuesday Dec 6.

Inflamed gland on left side throat, & not at all up to going out – so sat writing till 12, & then was packing up till 6 – Throat & general state getting worse all day, & I could hardly eat anything– Not a cheerful look out for starting on a voyage. Packed up all I wanted, & then supper on tomatoes & tapioca. I got this cold out looking at the eclipse, I think– To bed by 7– Temp. 102°

Wednesday Dec 7

Up at 6 ½, throat as bad, but temp. down to 100°: Then had a cup of chocolate, & handed the things out to Ali who had obtained two donkeys to carry them down. We did not get off before 8; and then the donkeys went very slow, & it was a bitter cold wind. I pushed on ahead, & got off for walking, twice. At last I reached the boat by 10 $\frac{1}{2}$, but found that they were not expecting to get off so soon. So leaving word about any baggage. \mathbb{W} I went off to consult D^r Grant. I found him in happily, though it was after 11, & he said my throat was not serious, & would not need to stop behind for it; so he cauterized it, as it was suppurating, & told me to go on with caustic solution, & quinine & iron in small doses. Then he introduced me to M. Wilbour (a Belgian?) who speaks English perfectly. I had some talk with him & then left. Went & got the prescriptions, & some more belladonna. Then to boat, found baggage arrived; got a few

hed lent Jeac was Julates Alus about Wasta little flag, has his salutes

things opened & straight, & then went to bed; temp was up to 102° again. I had some soup in the evening, & got down to 101°. Prof. Sayce was laid up with <u>chest & throat</u>.

Thursday Dec 8.

Down to 100°; still stopped in bed, had a good breakfast however, feeling ready for it f though throat was still bad. By lunch I thought I would turn out for an hour or two. Had lunch; then 4 oclock refection, & at last staid for dinner, finding that feeding was improving. In the evening a long discussion went on between the Prof^I & M^{I} L. on the tablet supposed to date the Sphinx before the Δ 's, in which we went at <it> briskly. Hwe got[?] told[?] In the morning, M^{I} Ellis turned up at last, brought me 2 doz of dry plates of his own, & promised to get my box if it arrived, & bring it with him, when he joins us at Wasta about a week hence. There was a contrary wind, so we only poled out into the stream, & waited. Temp. down to 99:4°.

Friday Dec 9.

Temp: not down at all farther, still I felt brisk, so got up at 6 ½, had a bath, & a read before anyone else appeared. It was a lovely day, very little wind to help us, but that a warm weather, & I could enjoy being on deck, in spite of my throat. The Khedive passed us in his steamer, out for the day, at lunch, his band playing God Save the Queen; we were quite taken by surprise; but sighting him returning <from Helwan> about 4, we were dr ready; saluted him with hats & flag, had his salutes in return & God Save the Q. again. Temp^r normal at night.

: the part 9 Siturday Declo Tenft would again split up ; Voof . Sugar Auguel, went off first to Jakkera we went to the new prove where nothing was to be seen s, that I expired last se for look at all that could ! 1 a lade I after that, the Profs afind the - . While he wrong by expres last Form a shallow will just und look at the bottom, which seems to rom trales follows me, & taky my beckoned me invard. So follows a series feallences of this mum built up at various parts with brick walls mummis, all filling the passage ; End a back of my profection them pots, as all on the surface even broken about by the bracks. They did not - seen to know the place well, Ashouthet to those above

Saturday Dec 10

Temp^r normal again. The party split up; Prof. Savce & myself went off first to Sakkara; there we went to the new pyramids, & looked at two where nothing was to be seen of inscrip^s & then went to Pepi's, that I copied last season. There we had a good look at all that could be seen without going down by a ladder. After that, we completely puzzled our donkey boys & upset their calculations by refusing to go to the regular sights, which we both knew, & went round under the hills to the very early tombs at Abusier <the inscrips of> which were unknown to Lepsius, &c. There we had lunch, & after that, the Prof^{*I*} copied the inscrip^{*S*} that I had roughly copied last year. While he did this, I dropped down a shallow well just under the inscrip^s, to have a look at the bottom, which seemed to open into a chamber, some Arabs followed me, & taking my candle beckoned me outward. So I followed, & we went into a series of galleries of Ibis mummy pits, which had been built up at various parts with brick walls. I saw at the end a bank of mummies, all filling the passage; I did not see any perfect in their pots, as all on the surface were broken about by the Arabs. They did not seem to know the place well, & shouted to those above to

tracke then way back again. Her after selve sundry the caves We wen inseription I chies last time. After they, we In the b apen In just 940 sentit of to lit 5. le Jown, forthe d. to knows less we

track their way back again. Then after returning, we went over sundry other caves, seeing again the inscrip<u>ns</u> I copied last time. After this, we got on donkeys again & returned, through Memphis again, to the boat; getting in just also before sunset. I was delighted to find my mem[?] railway receipt for the box of plates at last. So I sent it off to M^I Ellis. M^I Gott was so bad with stomach, if <that> being consumption, the Lofties were frightened, & sent for D^I Grant. After dinner, the D^I came in, at 9: & says that is the temp^I goes down, the case will be all right. There is no way for the D^I to return, till 7 train tomorrow, so he sleeps on board. I am not sorry for him to see my throat, which does not heal well.

12. Memphis.