

About two months ago three marble pillars were discovered in one of the sandpits before mentioned; they are all of the same size and architecture. A drawing of these might likewise be interesting. About a month ago I also found in the town a lamp similar to the one found in the Pool of Bethesda, with this exception: at the broadest end in bas relief is something not unlike a serpent's head.

Many curious seals are at times found here and about the district of Gaza. I might send you sealing-wax impressions of some of these if you think they would be of any interest. I shall always be very glad to keep you duly informed of everything that may be found at Gaza, and supply you with copies, &c.

J. G. PICKARD, *Gaza*.

STATE OF THE RUINS OF BAÄLBEEK.*

Extract from a detailed report by Lieutenant Conder, R.E.

IT being necessary, during the extreme heat of summer, to suspend the outdoor work of the Survey for some weeks, and to move the camp to the cooler mountain region of the Lebanon, the Committee requested Lieutenant Conder to devote some portion of the time spent in that district to a careful examination of the ruins of the magnificent temples of Baälbek, which are reported by travellers to be in a most precarious condition, especially the group known as the "Six Great Columns." Letters on the subject have appeared during the last two years in the *Times* and other papers from Mrs. Burton, Mr. Julian Goldsmid, Mr. Crace, and others. This "vacation task" Lieutenant Conder has undertaken with energetic enthusiasm, and he has now sent home a report, dated August 22, giving most careful technical details of the defects, and consequent risks of each column of the "great" and "lesser" temples, with such dimensions and other information as will make it a valuable document to any who may desire to ascertain whether it be possible to delay the impending destruction of these splendid monuments. The subject not being directly connected with the work of this Fund, the Committee do not propose to print the whole report, which, however, will be made available to those specially interested. They think, however, that the following extracts will prove interesting to many subscribers. Lieutenant Conder says:—

"My attention was directed to three principal objects—1. The condition of the key-stone of the great lintel of the Temple of Jupiter. 2. The condition of the peristyle of the same. 3. The condition of the six remaining columns of the Great Temple.

"1. The eastern doorway of the (so-called) Temple of Jupiter is 21ft. wide, and 42ft. high in the clear. The jambs are huge pilasters, in three courses, containing interior staircases. The lintel consists of three

* The report will be found at length, and fully illustrated, in the *Builder* of October 4.

stones, the central key-stone being slightly tapered, as in an arch, and apparently once held in place by metal clamps. The stone is a hard, compact, non-fossiliferous, white limestone. I have taken its specific gravity roughly at 2.5 in order to approximate the various weights, but send home a specimen to allow of their being more exactly determined. The key-stone measures 10ft. 10in. in height, 12ft. in thickness (front to back), and has an average breadth of 6ft. 5in. It must, therefore, contain approximately 858 cubic feet, which will give a weight of about 60 tons. . . . It has slipped down rather more than half its depth from its original position, and on the south side only about one quarter of its side bears against the other block, which is broken away below. A wall of roughly squared stones (of about a foot cube), in mortar, has been built under the key-stone by the Turks, and appears to be a suitable and sufficient support. The only objection to be made to it is that the soffit of the stone is thus covered, and the eagle invisible. Should it be proposed to raise the lintel to its former position, the superincumbent stones, each weighing about 20 or 30 tons, must first be removed. I did not observe any indication of present danger, except from the jar which the fall of the smaller stones of the cornice might give. The other blocks of the lintel appear to be safe. The fall of the key-stone is probably attributable to the removal of the metal clamps, and to subsequent shocks of earthquake.

"2. *The peristyle.* On the north side nine columns remain, with roofing; on the west, three, with only the entablature; on the south, four, and two of the fluted inner row which ran from the antæ and in front of the temple on the east. Judging from a fallen column the heights are as follows:—

			Ft.	In.		Ft.	In.
First stone	...	...	22	5			
Second "	...	...	14	11			
Third	...	...	11	3			
			<hr/>		Shaft	...	48 7
					Capital	...	5 11
					Base	...	3 4
							<hr/>
							57ft. 10in.

The diameter at the base is 5ft. 7in., and at the capital 5ft. The intercolumniation is 8ft. 10in., and the width of the peristyle, in the clear, the same."

Lieutenant Conder then gives the dimensions of the entablature, and calculates the weight of that and the roofing as equivalent to "a crushing weight, on each pillar, of 105½ tons, or 4 tons per square foot." "The centre of gravity of this weight is easily calculated, and will be found to pass through the centre of the pillars." He then goes on to describe, in detail, the condition of each pillar of the peristyle, by aid of a figured plan. Almost every one of them has been much injured both by man and earthquake, as well as by natural decay, and most of them have been excavated at the base, by the Arabs, for the sake of the metal pin, which has been abstracted from the centre.

The general conclusion is arrived at that the two external columns on the north side are in a dangerous condition,—“the next to them are cracked and overloaded, and the remainder, though at present safe, would suffer in the same manner, from unequal loading, on the fall of the outer. The condition of the entablature is also unsafe.” Lieut. Conder also calls attention to the risk to the columns at the south-east angle of the temple, caused by the Saracenic tower built over that portion, and which causes a serious overweighting of the lower structure. He suggests the removal of this later superstructure, but allows that it would be a work of difficulty.

Perhaps that part of the report which treats of the condition of “the six great columns” will be deemed most interesting, as their danger is also more imminent. Lieut. Conder describes the causes of danger with great care, and in detail he says:—

“The diameter of these columns is 7ft. 6in. at the base; the height (according to Murray, who gives the diameter and entablature correctly) is 75ft. including base and capital.” The entablature is (in design) exactly similar to that of the former temple, and its centre of gravity is at a distance of 3ft. 3in. from its north side, thus bringing its greatest weight on the south side of the columns. “The columns are exposed to the full force of the northern and westerly gales, and have suffered far more on these sides. They are shattered from top to bottom, and are flaking off rapidly. They appear to have been subjected to the effects of frost as well as of rain and wind.”

Lieut. Conder then enumerates the columns, commencing from the west end of the group:—

- No. 1.—Has two pieces excavated just above the base; one to a depth of 2ft. 3in. A piece flaked off 10ft. high and 1ft. deep, and a large piece containing about 70 cubic feet cracked off the base.
- No. 2.—Has an excavation 2ft. 6in. high, 2ft. deep, and about 3ft. wide; all three stones of the shaft are shattered, and flaking on the north side.
- No. 3.—About 56 cubic feet cracked off the base block. A piece about 2ft. thick cut out across the base of the shafts, and large fragments peeled and flaked off.
- No. 4.—This pillar is very infirm. Large flakes have fallen off, and the cracks show that more will follow. At the bottom only about half the diameter is left.
- No. 5.—Has a large piece chipped off the base, and very serious fractures in the highest and lowest blocks of the shaft.
- No. 6.—Is the most “shaky” of the group. Large pieces have been cut out above and below; and “underneath the base a stone has been abstracted measuring about 40 cubic feet.” This column is likely to fall in the first great storm, and to bring down No. 5 with it.

Lieut. Conder gives many additional details and measurements, accompanied by explanatory diagrams. But his report will be published with

his illustrations in *The Builder*, to which periodical we may refer such of our subscribers as may be more specially interested in the question of the possibility of preserving these grand remains to another generation. The subject is, strictly speaking, outside the objects of the Fund, but, opportunity offering, the Committee directed the attention of their surveying officer to the subject, and requested his report, feeling that the matter was urgent, and that, having so competent an officer on the spot, they might, at small sacrifice, render an important service to archaeology and art.

NOTES FROM MR. CL. H. GREEN ON THE GEOLOGICAL SPECIMENS SENT HOME BY LIEUT. CONDER.

I HAVE at last found time to look over the geological specimens which Lieut. Conder has sent home from Palestine. The parcels are numbered up to 42, but there are none of the numbers 3, 9, 11, and 13.

Fourteen of the specimens contain fossils. Without help and books of reference, which I cannot get here, I cannot determine these; some are certainly of Cretaceous, and some probably of Jurassic or Oolitic age. When I am in London, towards the end of the year, I dare say I shall be able to give you a more detailed description, and the names of some of these fossils; others which are imperfect, or only in the state of casts, will scarcely be determinable specifically.

Ten of the parcels, Nos. 1, 6, 27, 28, 29, 30, 31, 33, 35, and 42, are specimens of volcanic lavas and ashes. With one exception, No. 42, which is a trachyte, and not taken from a rock or place, all the lavas are doloritic in mineral composition; their structure also seems to indicate that the outpourings were subærial, or, if they flowed under water, that it was of no great depth.

There are two specimens of sedimentary beds, from volcanic localities. No 2, a red calcareous sandstone from Shayk Iskander, and No. 32, consisting of thin laminæ of similar sandstone and green marl, with layers of fibrous carbonate of lime, from Ikzim. These have the look of deposits formed in a lake; there is nothing to show whether they are interstratified or not with the volcanic rocks. Possibly they indicate a similar state of condition to those under which the rocks of Auvergne were formed where there are alternations of lacustrine strata with volcanic ash and lava. In the same parcels are many fragments of white calcareous tufa, which look like portions of veins that have been deposited by percolating water in the cracks of the lava. All the volcanic rocks are saturated with carbonate of lime produced in this way. The date, or dates, for the volcanic eruptions of Palestine took place at different times, and must be determined by the geological structure of the country; it is probable that all are younger than the Lower Tertiary, or Nummulitic beds, and I should not be surprised if many turn out to be of Middle Tertiary, or Miocene age.