

thysself in the dust. Pass ye away, thou inhabitant of *Saphir*." It is a remarkable coincidence that near the same Wâdy, not 2 miles from Kerattya, is the village *Beit* (= house) *'Afeh*, and another 2 or 3 miles farther down called *es Sââfir*.

The resemblance of these names to those above must be more than accidental.

Saphir has already been identified with *es Sââfir*, and if we take *Beit 'Afeh* to represent "the House of Aphrah," Gath must have been near.

The Onomasticon of doubtful credit, mentions a Gath between Jammia and Antipatris, and one 5 miles from Eleutheropolis (*Beit Jibrin*) on the way to Diospolis (*Lydda*), but Jerome (in Micah i, 10), states that Gath was on the borders of Judah, on the way from Eleutheropolis to Gaza. This exactly suits a position at (or near) Kerattya close to the track from *Beit Jebrin* to *El-Mejdel* (near *Ascalân*), and the Antonine Itinerary, and the Pentinger Table give the stages thus: Eleutheropolis—Askalon—Gaza.

About two miles east of *es Sââfir* there is marked on the map a low eminence (248 feet above the sea) called *Khirbet Jeledtyeh*, close to which are ruins and cisterns. As Bethany has become *el Aziriyeh* in memory of Lazarus, so the ruins of Gath may, owing to her famous champion, have been named *Khirbet Jeledtyeh*, if this word as well as *Jâlûd* would be the Arabic form of Goliath. With Gath removed from *Tell es Sâfi*, the identification of the latter with *Libnah* ("Sinai," p. 258) seems to me irresistible.

W. F. B.

## EASTERN PALESTINE.

THE recent publications of the Palestine Exploration Fund Plans of Western Palestine, have enabled me to check the correctness of my reconnaissance of the Jordan Valley East, Gilead, and Moab, with the most gratifying results.

Starting with the peak of *Kurn Surtabeh*,\* as a point of reference for latitude and longitude, I find that my position of Jericho is exactly correct for latitude, and differs only 4 seconds of arc for longitude (equal to 03 inch on the scale of  $\frac{1}{2}$ -inch to the mile). The island on the northern extremity of the Dead Sea is also exact for latitude and 18 seconds too far west in longitude, or about 15 inch on same scale.

My sketch of the Jordan lies over that on the published plans, crossing

* Kurn Surtabeh.	Latitude.	Error.	Longitude.	Error.
Trig. Survey....	32 5 43....	— ....	35 27 22....	—
Warren ....	32 5 25....	-0 13....	35 27 50....	+0 28
Anderson ...	32 5 33....	-0 15....	35 29 03....	+1 41

and recrossing, and is nowhere more than 30 seconds of arc apart, except in one spot, where I have shown a loop of 1 minute to east. Whereas the Jordan as surveyed by Lieutenant Lynch, varies in distance from 1 minute to 6 minutes of arc to east of Jordan on Palestine Exploration Fund plan. I should state that I did not sketch the minor twists of the Jordan themselves, but accepted those of Lieutenant Lynch, only altering the general positions from 1 to 5 miles to west.

I find that in carrying the work on from Jaffa to Kurn Surtabeh, I have an error of 30 seconds of arc in about 43 minutes of arc, but at Jerusalem I had an error of only 11 seconds in 30 minutes.

Taking 10 seconds as the limit of error in these astronomical calculations, I would propose from these and other data, that my mean error in carrying the longitude eastward from Jaffa is 15 seconds in 30 minutes of arc, or 1 in 120.

Now, my most easterly point is near 'Amman, about  $1^{\circ}15'$  east of Jaffa, and I should suppose therefore that my utmost error there would amount to  $37\frac{1}{2}$  seconds of arc plus 10 seconds limit of error.

Having arrived at this conclusion, I can apply a constant correction for each observation for longitude, and thus hope nearly to eliminate this error and obtain both the latitude and longitude of the principal points east of the Jordan in Gilead and Moab, to within a limit of 20 seconds of arc, or 600 yards on the earth surface.

Twenty seconds of arc of longitude in this latitude measures about one-fifth of an inch, roughly speaking, on plan.

In this reconnaissance I surveyed about 1,400 square miles in 28 days, including special surveys of Aman, Jerash, Nebo, and other ruins, besides examining sites and arranging for taking about 50 photographs.

At this rate 15,000 square miles could be surveyed in 12 months, on a scale half-inch to the mile, with a prospect of the limit of error not exceeding one-fifth of an inch on plan, from one end of the survey to the other.

I have to suggest that this is the system which should be adopted for the south country below Beer sheba from Gaza to Rhinocolura, round to Petra.

It would cost about £3,000.

I was the first to advocate a detailed trigonometrical survey for Palestine proper, on account of the mass of biblical sites so close together, but in the south country such detailed accuracy is not requisite; a detailed survey would be out of place, it would occupy about 10 years, and cost about £25,000.

CHARLES WARREN.

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## NOTES ON DISPUTED POINTS.

*The Calves of Bethel.*—Mr. Birch's paper on this subject has caused me to reconsider the views on the question put forward in the Quarterly State-