

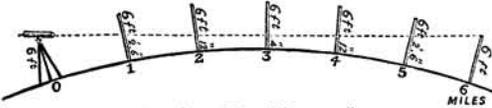
# THE COUNTRY HOUSE.

## EXPERIMENTS ON THE CONVEXITY OF WATER.

SIR,—I am very much afraid that, were the straight-edge of truth and honesty applied to some of the lines of your correspondent Mr Wallace, considerable deviation would be manifest in many points. I will, however, notice but one instance. Mr Wallace says that he "never used the word *rise* in connection with these experiments." But, Sir, you truly say in your leading article upon the subject on March 26, "In language as plain as could be used, and repeated by us on the 5th of March, before the trial took place, Mr Wallace engaged to show, to the satisfaction of the referees or the umpire appointed by them, that of three objects fixed in a straight line equidistant from the surface of the water, and three miles apart, the middle one should appear to rise five feet or more from those at the two extremes, as seen in a telescope capable of reaching the six miles on a clear day." And this has been the very life and soul of the experiments from beginning to end. But I must quote from Mr. Wallace's own writing, penned a few days before the experiments, and when it was intended that there should be signal staves six feet high placed at every mile, instead of one only in the centre of the distance:—

"If the water line is straight and flat, the tops of these poles will, of course, be straight and flat too; but if the earth and water has a curvature of 4000 miles radius, then the tops of the poles will be equally convex, and they will be seen rising higher and higher to the middle point, and thence sinking lower and lower to the furthest one, and the amount of rising and falling will be nearly the feet and inches I have put down on the diagram.

"Telescope pointed to the top of staff of same height, 6 miles off.



"Surface of Canal if convex."

But enough of this. There can be no question whatever that Mr Wallace agreed to prove a curvature of the surface of water. There can also be no question that Mr Wallace showed two points, to all intents and purposes equidistant from the point of observation (the third point), the three being in a regular series—for the diagrams, attested as to their correctness by his own referee, bear lasting witness to the fact; and, over and above this, Mr Wallace has himself admitted it in your journal of April 2, where he not only asserts the fact, but absolutely bases an argument upon it. Now this fact, namely, the equidistant appearance of the signals, Mr Wallace says, "is absolutely inconsistent with their being in any straight line," and "is perfectly consistent with the three points being in a circle." But this is simply and demonstrably the reverse of the truth; and, whether Mr Wallace be able to see it or not, the fact remains, and is so utterly incontestible that it must be patent to every man of common sense, that three points in the circumference of a circle never yet have been, and never can be, in a straight line; and three points in a regular series, laterally and vertically equidistant, must always necessarily be in a straight line, and cannot by any possibility be in any other.

And further, that this is the basis of the whole question is borne witness to by your correspondent, Mr Westlake, who, assuming that they were not, says, "if they had been equidistant, he" (Mr Carpenter) "would unquestionably have been entitled to a decision in favour of Mr Hampden, because a line joining the three points would have been, as he says, a straight line, and not a curved one as Mr Wallace was required to prove."

No further than this need human reason go towards a settlement of the question at issue. No evidence is now required to prove that the three points were in a straight line, for Mr Wallace has admitted the fact of the equidistant appearance of these three points, the very fact which renders this conclusion inevitable and irresistible, although he may have failed to see it; and therefore is it indisputably shown that Mr Wallace has failed to prove a curvature, and that Mr Hampden is clearly entitled to a decision in his favour, notwithstanding your decision to the contrary.

Lewisham Park, S.E., April 4.

WILLIAM CARPENTER.

[We leave Mr Wallace to reply to this specious letter, although to a certain extent it implicates our decision.—ED.]