

## The Fourth Dimension.

SIR,—Mr. Alfred R. Wallace, in his letter on this subject in "LIGHT" of September 29th, denies that we know space as dimensional at all, and seems to consider that that disposes of the "fourth" dimension. I would respectfully point out to him that the question of abstract "infinite" space is not directly in issue. If it were, I should infer from his statement, "Space has no definite number of dimensions, since it is necessarily infinite, and infinite in an infinite number of directions," that he does not really so much deny four, as insist on any number of, dimensions. It may be improper to say we know "space" as three-dimensional, but we do know objects in space as having length, breadth, and depth, which is all that is meant by three-dimensional space. And the question I raised is whether any perception could give an object either without depth (or without both depth and breadth), or an object which would not be sufficiently defined in general as to its directions in space by saying that it had length, breadth, and depth; an object which, could it be perceived, mathematicians or geometers would describe as four (or more) dimensional, just as they now describe our objects as three-dimensional. But if, arguing the question as one of "space" in the abstract, by its "infinite number of directions," Mr. Wallace merely means the infinite number of distinct lines

which can be conceived horizontally and vertically, then he himself limits space to those directions which we know—that is, to our knowledge of it—and so begs the question. The mathematicians who are—rather improperly, it seems to me—called anti-Euclidians suppose an “absolute” space which is not limited according to our knowledge of it by directions horizontal and vertical. This conception is really that of the ideality of space, a conception which agrees with the metaphysical account. The more “dimensions” known, the more is this ideality apparent. It is already apparent in the fact that to our percept essentially belongs the *relativity* of terms which we can only think as “limits,” not separately perceive as “parts” of the object. The surface is ideal for us; we know it only as the “limit” of the solid. We find, then, that the general condition of perception in space is that the object shall be a magnitude ideally defined by limits. But surface—as also line—is itself such a magnitude. I, therefore, infer that surface and even line are *possible* percepts. When I am told that the plane surface is a mere “abstraction” out of relation to the vertical surface (third “dimension”), I agree that it is so—for *our* consciousness, and I neither know nor can conceive “space” out of relation to *any* consciousness. But I can easily conceive—though not imagine—a percept giving superficial without vertical magnitude. And I should describe such a percept as simply a disintegration of our own, presenting as sense real a magnitude which for us is a relation in a higher objective or space-integration. Similarly, I can conceive—but not imagine—a higher sense-consciousness than ours for which our sense-real or space object would be a mere abstraction out of relation to the higher-perceptual synthesis, or integration, of such consciousness. And, ultimately, I not only can conceive, but do most assuredly believe in, a consciousness supremely integrative, the objectivity of which is entirely rational and ideal, the relationally differentiated expression of its own unity, such a system of relations being the formal and infinitely modifiable harmony of a “nature” perfect and divine.

A divine (or truly *universal*) nature cannot consist of an unrelated, or only externally related, multitude of isolated things, but must have integral unity, so that no part is independently “without” the rest; in other words, just that internal relativity which constitutes our own unit of objectivity (or single object) must comprehend all nature, so that all nature should be one in essentiality of relation, or a complete organic universality.

According to this conception of what universal nature really is, it can only be the defect of our cognition of it that sunders the relativity, or breaks up the cosmos into separate objects with no apparent essentiality of relation *inter se*, but in a mere extremity one to another. It is only a consciousness raised to harmony with the divine, and reflecting it, that could perceive the true unity of a nature which is the divine objectivity or manifestation. True, the conception of additional “dimensions” can only give us the general idea of that unity in so far as we see that the individual unity of our particular natural objects is due to the relativity which we call dimensional. But unity in relation is the imperative demand of reason, being the final term of its own logical process, and the unity in relation of the world of space can only mean for us the highest degree of that ideality which already for our experience partially redeems nature from chaos and makes it suggestive of a cosmos. And that ideality is the “dimensional” constitution of the spacial object. What it would mean for the unitary integration of all objectivity, how in universal relation it would be raised from spacial formality to higher significance, we only cannot say, because our self-consciousness is as abstract as our percepts, not knowing ourselves as we are known, in the sum of relativity.

But this view can never be appreciated till we learn to reverse our present conceptions of “abstract” and “concrete,” and to see that what is really abstract is the self-sense, and the percept, and that the integrational idea *from* which these are abstractions is the only concrete. Every percept, indeed, is *pro tanto* integration, and, so far, real or concrete. There can be no cognition which is not. Just, therefore, do we rightly call line and surface “abstractions” if considered out of their relation in the solid. What we fail to see is that we are in the middle place, so to speak, in cognitional degree, and that these relations in our percept we call abstract and unreal if considered apart, have, nevertheless, potential independence for a yet more *abstract sense* than our own. In other words, the possibility of such a more abstract sense than ours, is only

denied because we do not entertain the conception of our own sense being itself abstract in relation to one more integrative. As soon as we do entertain that most rational conception, we see at once that our solid must have the same general rank and character, as “mere” limit or relation, in the object of higher integration, as have line and surface in our solid. And the presumption of a more abstract sense than ours, corresponding with line and surface percepts, immediately arises. There cannot be an objective *point* consciousness, only because an “object” has always a related content and is so far integrational. For the consciousness in which subject and object are discriminated there must always be differentiation *in the object*, because self-consciousness is the reflection of the relating, of the unity in differentiation. The point represents only the potentiality of consciousness. The point going out from itself into the line is the differentiating consciousness which then recovers its unity in this process, as the “self.” C. C. M.