

OF the sixteen articles in the *Fortnightly Review* (London and New York) for September the one of most interest to our readers would probably be Dr. Alfred R. Wallace's "Reply to Criticism" of his article in the April issue of *The Fortnightly* on "Man's Place in the Universe." The chief points of his April article were that the stellar universe is limited in extent, and that our sun (and the solar system) occupies an approximately central position in relation thereto. The eminent astronomer says that the more important criticisms offered upon his article are three in number: *First*, that he has given no proof that the stellar universe is not infinite in extent; *second*, that if our system holds at present a central position in the universe, that can only be temporary, because of the sun's motion through space; and *third*, that there is no advantage or significance whatever in a central position for our solar system, even if it could be proven. In reply

Dr. Wallace says, as to the first-named criticism, that he did not attempt to offer *proof*, since both proof and disproof are alike impossible as regards what exists or does not exist in infinite space. The only question is whether what evidence we have is for or against the infinite extension of the universe. And his contention is that we *do* possess several distinct kinds of evidence, all pointing toward a limited stellar universe. In support of this thesis he quotes from Sir John Herschel, the man who most completely studied the whole heavens, and most deliberately thought out through a lifetime devoted to the science the great problems of astronomy. He also quotes or refers to Dr. Isaac Roberts, Mr. J. E. Gore, Professor Newcomb, and Miss Clarke, the historian of modern astronomy, as among the astronomers who conclude that the universe is limited in extent. And he holds that the three lines of evidence he has presented in favor of that conclusion have not been weakened by any criticisms. As to the second point on which Dr. Wallace's critics lay most stress, which is that even if it be shown that our sun is in a central position in the universe now, the sun's known motion through space shows such position to be but temporary and for that reason of no significance,—as to this criticism, Dr. Wallace's reply is too elaborate and intricate and technical to be presented here; but he closes his argument on this point by claiming that he has shown the objections against his view to be worthless. As to the third objection, that if our position in the stellar universe were shown to be central and permanently so, it would be of no advantage or significance to us whatever, Dr. Wallace refers us to his book, about to be published, for a clear explanation of the importance of our central position, as being the only position which could afford the conditions essential for the long processes of life-development. A careful restudy of the whole subject made since the publication of his first article has only confirmed him in his conclusions. In his study of the biology and physics of the earth and solar system, he finds that such delicate adjustments and such numerous combinations of physical and chemical conditions are required for the development and maintenance of life as to render it improbable to the last degree that such conditions should all be found again combined in any planet, while within the solar system this improbability approaches very near to certainty. In the strictly astronomical part of his coming volume Dr. Wallace shows that a large body of facts, ascertained by recent research, have a direct bearing on the question of there being other inhabited planets revolving around other suns; which facts, he thinks, will satisfy those who come to the subject without prepossessions that the combination of probabilities against such an occurrence is so great as to encourage the conclusion that *Our Earth is the only inhabited planet in the whole Stellar Universe*. We would like to turn over to Dr. Wallace those depressing if not pusillanimous gentlemen, the apostles of "the cosmic chill." Let them settle with him.