the ſurface of the preſent earth ſhould be full of mountains, gulfs, plains, and irregularities of every kind.

This ſpecimen is ſufficient to give an idea of Burnet's ſyſtem. It is an elegant romance, a book which may be read for amuſement, but cannot convey any inſtruction. The author was ignorant of the chief phænomena of the earth, and a man of no obſervation. He has drawn every thing from imagination, which often acts both againſt truth and reaſon.

PROOFS

OF THE

THEORY OF THE EARTH.

ARTICLE IV.

Of the Syſtem of Woodward *.

OF this author it may be ſaid, that he wanted to build an immenſe edifice upon a foundation leſs firm than ſand, and to conſtruct a world with duſt; for, he aſſerts, that the earth, at the time of the deluge, ſuffered a total diſſolution. In peruſing his book, the firſt idea which preſents itſelf is, that this diſſolution was effected by the waters of the great abyſs. He alleges, that, at the command of God, the abyſs ſuddenly opened, and diffuſed ſuch an enormous quantity of water on the ſurface, as was ſufficient to cover the tops of the higheſt mountains; and

* An Eſſay towards the Natural Hiſtory of the Earth, by John Woodward.

that God ſuſpended the law of coheſion, which inſtantly reduced every ſolid ſubſtance into a powder, &c. He did not conſider, that, by theſe ſuppoſitions, he added to the miracle of the univerſal deluge many other miracles, or, at leaſt, phyſical impoſſibilities, which accord neither with the ſcriptures, nor with the principles of mathematics and of natural philoſophy. But as this author has the merit of collecting many important obſervations, and as he knew better than any former writer the materials of which the globe is compoſed, his ſyſtem, though ill conceived and worſe arranged, has ſeduced, by the luſtre of a few ſtriking facts, many weak men into a belief of his general concluſions.

We ſhall now give a ſhort view of his theory, by which we will be enabled to do juſtice to the merit of the author, and put the reader in a condition to judge of the futility of his ſyſtem, and of the falſehood of ſome of his remarks. Mr. Woodward informs us, that he recogniſed with his own eyes all the materials of which the earth in England is compoſed, from the ſurface to the greateſt depths that had been dug; that they were all diſpoſed in beds, or ſtrata; and that, in many of theſe beds, there are ſhells and other productions of the ſea. He then adds, that he was aſſured by his friends and correſpondents, that in all the other countries of the world, the earth was compoſed of the ſame materials; and that ſhells are found, not only in the plains,

plains, and in ſome particular parts, but on the higheſt mountains, in the deepeſt pits, and in an infinite number of different places. He obſerved, that the beds were all horizontal, and placed over each other, like matters tranſported by the waters, and depoſited in the form of ſediment. Theſe general remarks, which are founded in truth, are followed with ſome particular obſervations, by which he demonſtrates, that the foſſil ſhells incorporated with the ſtrata are real ſea-ſhells, and not peculiar minerals, or *luſus naturæ*, &c.

To theſe obſervations, though partly made before him, he has added others of a more ſuſpicious nature. He aſſerts, that the materials of the different ſtrata are arranged according to their ſpecific gravities. This aſſertion is not conſiſtent with truth: For we every day ſee ſolid rocks placed above clay, ſand, pit-coal, bitumen, and other comparatively light bodies. If, indeed, it were uniformly found, through the whole earth, that the upper ſtratum was bitumen, followed ſucceſſively by ſtrata of chalk, marl, clay, ſand, ſtone, marble, and metals, it would, in that caſe, be probable that all thoſe materials had been precipitated at once: And this our author affirms with confidence, though the moſt ſuperficial obſerver needs only his eyes to convince him, that heavy ſtrata are often found above light ones; and, conſequently, that theſe ſediments could not be depoſited at the ſame time, but muſt have been tranſported and

depoſited by the ocean at ſucceſſive periods. As this is the foundation of Woodward's ſyſtem, and is manifeſtly falſe, we ſhall follow him no farther than to ſhow how an erroneous principle produces falſe relations and bad concluſions.

All the ſtrata which compoſe the earth, ſays our author, from the tops of the higheſt mountains to the deepeſt mines, are placed according to their reſpective ſpecific gravities. Hence, he concludes, the whole muſt have been in a ſtate of diſſolution, and precipitated at the ſame time. But at what time, in what menſtruum, was it diſſolved? In the water, ſays Mr. Woodward, and at the time of the deluge. But there is not water enough on the globe to produce this effect; for there is more earth than water; and the bottom of the ſea itſelf is earth. Very well, he replies: But there is enough of water in the central parts of the earth; and nothing more was wanting than to beſtow on it the power of diſſolving every terreſtrial ſubſtance, except ſea-ſhells; to find a proper method of making the waters return to the abyſs; and to make all this correſpond with the hiſtory of the deluge. Behold a ſyſtem, of which the author could not prevail on himſelf to form a doubt; for, when it was objected to him, that water could not diſſolve water, rocks, and metals, eſpecially in forty days, the time of the waters remaining on the earth; he replied ſimply, that the event, however, did happen. When it was demanded

demanded of him, how the waters of the abyſs could diſſolve the whole earth, and yet preſerve the ſhells? He anſwered, that he never proved that this water was a diſſolvent; but that, from facts, it was clear that the earth had been diſſolved, and that the ſhells were preſerved. Laſtly, When it was demonſtrated to him, that his ſyſtem was uſeleſs, as it was neither ſupported by reaſon nor by facts, he ſaid, We had only to ſuppoſe that, at the time of the deluge, the laws of gravity and of coheſion were ſuddenly ſtopped, and, upon this ſuppoſition, the diſſolution of the ancient world admitted of an eaſy explanation. But, it was obſerved to him, if the force of coheſion was ſuſpended, Why were not the ſhells diſſolved along with the reſt? Here he gave a harangue on the organization of ſhells and of animal bones, tending to prove that their texture was fibrous, and different from that of minerals; that their coheſion was likewiſe different; and that, after all, we have only to ſuppoſe that the powers of gravity and of coheſion did not entirely ceaſe, but that they were diminiſhed to ſuch a degree, as enabled them to diſſolve the parts of minerals, but not thoſe of animals. I ſhall conclude with remarking, that our author's philoſophy was not equal to his talent for obſervation; it is therefore unneceſſary to give a formal refutation of abſurd notions, eſpecially when they proceed upon conjectures which are contrary both to the laws of probability and of mechanics.