

her ladyship by a young lady who could best interpret her own wants. The wants of men were understood by Lord Bacon. Instead of a barren philosophy, he substituted a fruitful philosophy. Instead of the philosophy of words, he substituted the philosophy of facts; experiment and observation were thenceforth the avenues of knowledge, and these led directly to the most important discoveries which have had a practical influence upon the condition of mankind. He commenced his reform of the study of science by taking a view of it as it then existed. He then investigated with a nice discrimination, the causes which gave rise to, and maintained the authority of the false and useless philosophy which prevailed; and these he detected in the infirmities of our very nature, when they addicted themselves to the study of philosophy, he discovered how apt the judgments of men were to be warped by their peculiar tempers and habits. "When men of confined scientific pursuits," he says, "afterwards betake themselves to philosophy and to general contemplation, they are apt to wrest and corrupt them with their former opinions." To this disposition of human nature, may be traced nearly all the hypothetical systems which from the remotest ages have overspread with mud and slime the fair field of knowledge—the proneness of men to judge of things they are indeed ignorant of by the rules that are applicable to the subjects with which they are familiar. This has been one of the greatest obstacles to science; and its universal prevalence, embracing men of every order and profession, has rendered it a matter even of common observation. Indeed, the cases are endless in which a certain bias arising from peculiar habits and profession, has founded the sharpest wits in their scientific inquiries. "I have known a fiddler," says Berkeley, "gravely teach that the soul was harmony—a geonetrician very positive that the soul must be extended—and a physician who having pickled half a dozen of embryos and dissected as many cats and frogs, affirm that there was no soul at all, and that it was a vulgar error." These prejudices, both general and particular were thoroughly sifted by Lord Bacon, and their influence upon the science of the age and preceding ages, clearly demonstrated. He classified and described them. Those prejudices or idols as he calls them, which are alike incidental to all, having their origin in the common principles of our nature and common circumstances of human life, are with him, idols of the species. Those that take their origin from the favourite or professional pursuits of the individual—from his profession or his order, are idols of the tribe. The peculiar character of a man, his singu-

lar temper arising from some want of harmony or balance in his moral or intellectual nature, produced prejudices which he called the idols of the den. The idols of the forum are prejudices that spring from the use of words in the commerce and intercourse of life; when words change their meaning, when they admit more or less of the same things, and admit or exclude different kinds of things, they become ambiguous and may be the source of a thousand fallacies. The idols of the theatre, again, are prejudices begotten by the influence of baseless and pretended theories, visionary systems of science, venerated because they are old, and because supported by the authority of great names. In this manner and by the illustration of such propositions as these, Bacon rendered to science incalculable service. An immense mass of elaborate but useless philosophers was thus thrust aside—dark lanterns that might shine to themselves, and possibly understand their own fanciful conceits, but which could give light to no one else. Such, for example, was Matthias Farinator, Professor at Vienna, who was occupied thirty years in applying the rules of philosophy contained in Plato, Aristotle and Galen, to Christ and the apostles—who published a work which was termed the light of the soul, but a darker thing than which is scarcely to be found in the universe.

But not only did Bacon point out the true end of philosophy, and explain the prejudices which caused the studious to miscarry in their scientific researches, he unfolded the proper method of conducting such researches—a method, which being generally adopted since his times, has been crowned with admirable success. It has been called the inductive method or the inductive philosophy, because it seeks the discovery of truth by the induction of facts. In the study of any science, the first thing to be done, is to take accurate observation of the phenomena, which are to be explained, to collect patiently and extensively the facts, to describe them with the greatest care, and give its due weight of evidence to each and nothing more. This being done, it only remains to consider what supposable causes are to be excluded, and what cause is to be retained. By comparing the facts, one with another, we arrive at the real cause or causes of the phenomena, if the induction be sufficiently extensive. The facts are so many witnesses whose evidence becomes the ground upon which the philosopher builds his conclusion. Unless he be satisfied that they are sufficiently abundant, that he has described them accurately, and weighed their evidence with an even hand, he has no confidence in any inference that he draws from them; the cause which he might assign in