CHAPTER VII.

OF THE CHEMICAL, OR EXPERIMENTAL, METHOD IN THE SOCIAL SCIENCE.

Sec. 1. The laws of the phenomena of society are, and can be, nothing but the laws of the actions and passions of human beings united together in the social state. Men, however, in a state of society, are still men; their actions and passions are obedient to the laws of individual human nature. Men are not, when brought together, converted into another kind of substance, with different properties; as hydrogen and oxygen are different from water, or as hydrogen, oxygen, carbon, and azote, are different from nerves, muscles, and tendons. Human beings in society have no properties but those which are derived from, and may be resolved into, the laws of the nature of individual man. In social phenomena the Composition of Causes is the universal law.

Now, the method of philosophizing which may be termed chemical overlooks this fact, and proceeds as if the nature of man as an individual were not concerned at all, or were concerned in a very inferior degree, in the operations of human beings in society. All reasoning in political or social affairs, grounded on principles of human nature, is objected to by reasoners of this sort, under such names as "abstract theory." For the direction of their opinions and conduct, they profess to demand, in all cases without exception, specific experience.

This mode of thinking is not only general with practitioners in politics, and with that very numerous class who (on a subject which no one, however ignorant, thinks himself incompetent to discuss) profess to guide themselves by common sense rather than by science; but is often countenanced by persons with greater pretensions to instruction; persons who, having sufficient acquaintance with books and with the current ideas to have heard that Bacon taught mankind to follow experience, and to ground their conclusions on facts instead of metaphysical dogmas--think that, by treating political facts in as directly experimental a method as chemical facts, they are showing themselves true Baconians, and proving their adversaries to be mere syllogizers and schoolmen. As, however, the notion of the applicability of experimental methods to political philosophy cannot coexist with any just conception of these methods themselves, the kind of arguments from experience which the chemical theory brings forth as its fruits (and which form the staple, in this country especially, of parliamentary and hustings oratory,) are such as, at no time since Bacon, would have been admitted to be valid in chemistry itself, or in any other branch of experimental science. They are such as these; that the prohibition of foreign commodities must conduce to national wealth, because England has flourished under it, or because countries in general which have adopted it have flourished; that our laws, or our internal administration, or our constitution, are excellent for a similar reason: and the eternal arguments from historical examples, from Athens or Rome, from the fires in Smithfield or the French Revolution.

I will not waste time in contending against modes of argumentation which no person, with the smallest practice in estimating evidence, could possibly be betrayed into; which draw conclusions of general application from a single unanalysed instance, or arbitrarily refer an effect to some one among its antecedents, without any process of elimination or comparison of instances. It is a rule both of justice and of good sense to grapple not with the absurdest, but with, the most reasonable form of a wrong opinion. We shall suppose our inquirer acquainted with the true conditions of experimental investigation, and competent in point of acquirements for realizing them, so far as they can be realized. He shall know as much of the facts of history as mere erudition can teach--as much as can be proved by testimony, without the assistance of any theory; and if those mere facts, properly collated, can fulfil the conditions of a real induction, he shall be qualified for the task.

But, that no such attempt can have the smallest chance of success, has been abundantly shown in the tenth chapter of the Third Book.[7] We there examined whether effects which depend on a complication of causes can be made the subject of a true induction by observation and experiment; and concluded, on the most convincing grounds, that they cannot. Since, of all effects, none depend on so great a complication of causes as social phenomena, we might leave our case to rest in safety on that previous showing. But a logical principle as yet so little familiar to the ordinary run of thinkers, requires to be insisted on more than once, in

order to make the due impression; and the present being the case which of all others exemplifies it the most strongly, there will be advantage in re-stating the grounds of the general maxim, as applied to the specialities of the class of inquiries now under consideration.

Sec. 2. The first difficulty which meets us in the attempt to apply experimental methods for ascertaining the laws of social phenomena, is that we are without the means of making artificial experiments. Even if we could contrive experiments at leisure, and try them without limit, we should do so under immense disadvantage; both from the impossibility of ascertaining and taking note of all the facts of each case, and because (those facts being in a perpetual state of change) before sufficient time had elapsed to ascertain the result of the experiment, some material circumstances would always have ceased to be the same. But it is unnecessary to consider the logical objections which would exist to the conclusiveness of our experiments, since we palpably never have the power of trying any. We can only watch those which nature produces, or which are produced for other reasons. We cannot adapt our logical means to our wants, by varying the circumstances as the exigencies of elimination may require. If the spontaneous instances, formed by cotemporary events and by the successions of phenomena recorded in history, afford a sufficient variation of circumstances, an induction from specific experience is attainable; otherwise not. The question to be resolved is, therefore, whether the requisites for induction respecting the causes of political effects or the properties of political agents, are to be met with in history? including under the term, cotemporary history. And in order to give fixity to our conceptions, it will be advisable to suppose this question asked in reference to some special subject of political inquiry or controversy; such as that frequent topic of debate in the present century, the operation of restrictive and prohibitory commercial legislation upon national wealth. Let this, then, be the scientific question to be investigated by specific experience.

Sec. 3. In order to apply to the case the most perfect of the methods of experimental inquiry, the Method of Difference, we require to find two instances, which tally in every particular except the one which is the subject of inquiry. If two nations can be found which are alike in all natural advantages and disadvantages; whose people resemble each other in every quality, physical and moral, spontaneous and acquired; whose habits, usages, opinions, laws and institutions are the same in all respects, except that one of them has a more protective tariff, or in other respects interferes more with the freedom of industry; if one of these nations is found to be rich, and the other poor, or one richer than the other, this will be an *experimentum crucis*: a real proof by experience, which of the two systems is most favourable to national riches. But the supposition that two such instances can be met with is manifestly absurd. Nor is such a concurrence even abstractly possible. Two nations which agreed in everything except their commercial policy, would agree also in that. Differences of legislation are not inherent and ultimate diversities; are not properties of Kinds. They are effects of pre-existing causes. If the two nations differ in this portion of their institutions, it is from some difference in their position, and thence in their apparent interests, or in some portion or other of their opinions, habits, and tendencies; which opens a view of further differences without any assignable limit, capable of operating on their industrial prosperity, as well as on every other feature of their condition, in more ways than can be enumerated or imagined. There is thus a demonstrated impossibility of obtaining, in the investigations of the social science, the conditions required for the most conclusive form of inquiry by specific experience.

In the absence of the direct, we may next try, as in other cases, the supplementary resource, called in a former place the Indirect Method of Difference: which, instead of two instances differing in nothing but the presence or absence of a given circumstance, compares two *classes* of instances respectively agreeing in nothing but the presence of a circumstance on the one side and its absence on the other. To choose the most advantageous case conceivable, (a case far too advantageous to be ever obtained,) suppose that we compare one nation which has a restrictive policy, with two or more nations agreeing in nothing but in permitting free trade. We need not now suppose that either of these nations agrees with the first in all its circumstances; one may agree with it in some of its circumstances, and another in the remainder. And it may be argued, that if these nations remain poorer than the restrictive nation, it cannot be for want either of the first or of the second set of circumstances, but it must be for want of the protective system. If (we might say) the restrictive nation had prospered from the one set of causes, the first of the free-trade nations would have prospered equally; if by

reason of the other, the second would: but neither has: therefore the prosperity was owing to the restrictions. This will be allowed to be a very favourable specimen of an argument from specific experience in politics, and if this be inconclusive, it would not be easy to find another preferable to it.

Yet, that it is inconclusive, scarcely requires to be pointed out. Why must the prosperous nation have prospered from one cause exclusively? National prosperity is always the collective result of a multitude of favourable circumstances; and of these, the restrictive nation may unite a greater number than either of the others, though it may have all of those circumstances in common with either one or the other of them. Its prosperity may be partly owing to circumstances common to it with one of those nations, and partly with the other, while they, having each of them only half the number of favourable circumstances, have remained inferior. So that the closest imitation which can be made, in the social science, of a legitimate induction from direct experience, gives but a specious semblance of conclusiveness, without any real value.

Sec. 4. The Method of Difference in either of its forms being thus completely out of the question, there remains the Method of Agreement. But we are already aware of how little value this method is, in cases admitting Plurality of Causes: and social phenomena are those in which the plurality prevails in the utmost possible extent.

Suppose that the observer makes the luckiest hit which could be given by any conceivable combination of chances: that he finds two nations which agree in no circumstance whatever, except in having a restrictive system, and in being prosperous; or a number of nations, all prosperous, which have no antecedent circumstances common to them all but that of having a restrictive policy. It is unnecessary to go into the consideration of the impossibility of ascertaining from history, or even from cotemporary observation, that such is really the fact: that the nations agree in no other circumstance capable of influencing the case. Let us suppose this impossibility vanquished, and the fact ascertained that they agree only in a restrictive system as an antecedent, and industrial prosperity as a consequent. What degree of presumption does this raise, that the restrictive system caused the prosperity? One so trifling as to be equivalent to none at all. That some one antecedent is the cause of a given effect, because all other antecedents have been found capable of being eliminated, is a just inference, only if the effect can have but one cause. If it admits of several, nothing is more natural than that each of these should separately admit of being eliminated. Now, in the case of political phenomena, the supposition of unity of cause is not only wide of the truth, but at an immeasurable distance from it. The causes of every social phenomenon which we are particularly interested about, security, wealth, freedom, good government, public virtue, general intelligence, or their opposites, are infinitely numerous: especially the external or remote causes, which alone are, for the most part, accessible to direct observation. No one cause suffices of itself to produce any of these phenomena; while there are countless causes which have some influence over them, and may co-operate either in their production or in their prevention. From the mere fact, therefore, of our having been able to eliminate some circumstance, we can by no means infer that this circumstance was not instrumental to the effect in some of the very instances from which we have eliminated it. We can conclude that the effect is sometimes produced without it; but not that, when present, it does not contribute its share.

Similar objections will be found to apply to the Method of Concomitant Variations. If the causes which act upon the state of any society produced effects differing from one another in kind; if wealth depended on one cause, peace on another, a third made people virtuous, a fourth intelligent; we might, though unable to sever the causes from one another, refer to each of them that property of the effect which waxed as it waxed, and which waned as it waned. But every attribute of the social body is influenced by innumerable causes; and such is the mutual action of the coexisting elements of society, that whatever affects any one of the more important of them, will by that alone, if it does not affect the others directly, affect them indirectly. The effects, therefore, of different agents not being different in quality, while the quantity of each is the mixed result of all the agents, the variations of the aggregate cannot bear an uniform proportion to those of any one of its component parts.

Sec. 5. There remains the Method of Residues; which appears, on the first view, less foreign to this kind of inquiry than the three other methods, because it only requires that we should accurately note the circumstances of some one country, or state of society. Making allowance, thereupon, for the effect of all causes whose tendencies are known, the residue which those causes are inadequate to explain may plausibly be imputed to the remainder of the circumstances which are known to have existed in the case. Something similar to this is the method which Coleridge[8] describes himself as having followed in his political essays in the *Morning Post*. "On every great occurrence I endeavoured to discover in past history the event that most nearly resembled it. I procured, whenever it was possible, the contemporary historians, memorialists, and pamphleteers. Then fairly subtracting the points of difference from those of likeness, as the balance favoured the former or the latter, I conjectured that the result would be the same or different. As, for instance, in the series of essays entitled 'A comparison of France under Napoleon with Rome under the first Caesars,' and in those which followed, 'on the probable final restoration of the Bourbons.' The same plan I pursued at the commencement of the Spanish Revolution, and with the same success, taking the war of the United Provinces with Philip II. as the groundwork of the comparison." In this inquiry he no doubt employed the Method of Residues; for, in "subtracting the points of difference from those of likeness," he doubtless weighed, and did not content himself with numbering, them: he doubtless took those points of agreement only, which he presumed from their own nature to be capable of influencing the effect, and, allowing for that influence, concluded that the remainder of the result would be referable to the points of difference.

Whatever may be the efficacy of this method, it is, as we long ago remarked, not a method of pure observation and experiment; it concludes, not from a comparison of instances, but from the comparison of an instance with the result of a previous deduction. Applied to social phenomena, it presupposes that the causes from which part of the effect proceeded are already known; and as we have shown that these cannot have been known by specific experience, they must have been learnt by deduction from principles of human nature; experience being called in only as a supplementary resource, to determine the causes which produced an unexplained residue. But if the principles of human nature may be had recourse to for the establishment of some political truths, they may for all. If it be admissible to say, England must have prospered by reason of the prohibitory system, because after allowing for all the other tendencies which have been operating, there is a portion of prosperity still to be accounted for; it must be admissible to go to the same source for the effect of the prohibitory system, and examine what account the laws of human motives and actions will enable us to give of *its* tendencies. Nor, in fact, will the experimental argument amount to anything, except in verification of a conclusion drawn from those general laws. For we may subtract the effect of one, two, three, or four causes, but we shall never succeed in subtracting the effect of all causes except one: while it would be a curious instance of the dangers of too much caution, if, to avoid depending on *a priori* reasoning concerning the effect of a single cause, we should oblige ourselves to depend on as many separate *a priori* reasonings as there are causes operating concurrently with that particular cause in some given instance.

We have now sufficiently characterized the gross misconception of the mode of investigation proper to political phenomena, which I have termed the Chemical Method. So lengthened a discussion would not have been necessary, if the claim to decide authoritatively on political doctrines were confined to persons who had competently studied any one of the higher departments of physical science. But since the generality of those who reason on political subjects, satisfactorily to themselves and to a more or less numerous body of admirers, know nothing whatever of the methods of physical investigation beyond a few precepts which they continue to parrot after Bacon, being entirely unaware that Bacon's conception of scientific inquiry has done its work, and that science has now advanced into a higher stage; there are probably many to whom such remarks as the foregoing may still be useful. In an age in which chemistry itself, when attempting to deal with the more complex chemical sequences, those of the animal or even the vegetable organism, has found it necessary to become, and has succeeded in becoming, a Deductive Science--it is not to be apprehended that any person of scientific habits, who has kept pace with the general progress of the knowledge of nature, can be in danger of applying the methods of elementary chemistry to explore the sequences of the most complex order of phenomena in existence.