all needed assurance. In this sense, then, Political Economy is a science.

Whether it be a science in the highest sense given that word, may be disputed. M. Comte, the great positivist philosopher, denied the claim of Political Economy to this title. In his view, it is an attribute of a true social science that it results in establishing a rational filiation between events, so as to allow of systematic prevision respecting their occurrence in a certain succession. Prediction—forecast of the future—is, according to M. Comte, the fruit of all true science. Of this, he asserts, political economy has not shown itself capable.

Prof. Cairnes rejoins that the economic prevision is a prevision not of events, but of tendencies. Admitting the incapacity of forecasting events, Prof. Cairnes urges that "it argues no imperfection in economic science. The imperfection is not here, but in those other cognate sciences, to which belongs the determination of the non-economic quantities in the problem, etc. * * Meanwhile it is no slight gain, in speculating on the future of society, to have it in our power to determine the direction of an order of tendencies exercising so wide, constant and potent an influence on the course of human development, as the conditions of wealth. * * * So much for the highest form of scientific fruit, 'forecast of the future.' The principle, however, of establishing a filiation in events may take the more modest form of explaining the past. * * That political economy, assuming that it fulfills its limited purpose of unfolding the natural laws of wealth, is capable of throwing light on the evolutions of history, will scarcely be denied."

26. The Practical Importance of Political Economy.—We can not stay to discuss the question. Whether Political Economy be or be not a science in the high sense attributed to that word by M. Comte, it assuredly is, as a branch of social inquiry, worthy the earnest attention of every publicist and every citizen. It deals with some of the most important subjects which concern society. Whether the degree of assurance that may be attained in the study of these questions be

higher or be lower, the questions can not but be more justly decided by reason of such study.

If Political Economy have not yet reached the standing of a true science, in the high sense in which that word is used by M. Comte; if political economists are still at disagreement on many points of theoretical or practical importance, it can not be denied that the investigation of the conditions of wealth by Adam Smith and his successors has already resulted in the removal of monstrous delusions which a century ago profoundly affected the legislation of every civilized country, to the inexpressible injury of the commonwealth of nations. The first fruits of Political Economy have been worth a million times the intellectual effort that has been bestowed upon the subject.

27. Distinction between a Science and an Art.—Before proceeding to inquire whether Political Economy should be dealt with as a science or as an art, it seems desirable strongly to emphasize the distinction between a science and an art. This is the more needed because of the strangely persistent habit of economic writers in confusing these two things, which should be kept clearly distinct.

A science, whether the science of mathematics, or physics, or mechanics, or chemistry, or geology, or physiology, or economics, deals only with the relations of cause and effect within its own field. It assumes nothing to be a good and nothing to be an evil. It does not start with the notion that something is desirable or undesirable; nor does it arrive at any such conclusion as its result. It has no business to offer precepts or prescriptions. Its sole single concern is to trace effects back to their causes; to project causes forward to their effects.

An art, on the other hand, starts with the assumption that a certain thing is desirable or that a certain other thing is undesirable; that something is a good or that something is an evil. The object it seeks is to ascertain how the good may be attained, or the evil avoided. In pursuing this inquiry, it makes use of the principles, or laws, governing the relations of cause and effect, which have been ascertained in the cultiva-

tion of any and all sciences that have in any way to do with its own subject matter. As a result, it issues with certain precepts and prescriptions for the guidance and assistance of those who would gain the good or avoid the evil which that particular art has in contemplation, whether it be the art of navigation, or of cookery, of painting, of gunnery, of architecture, of mining, or of weaving.

28. The Distinction Illustrated.—This distinction between a science and an art ought to be sufficiently clear; but the inveterate disposition of economic writers, which has been referred to, will perhaps justify an illustration which I shall make familiar, even at the risk of appearing coarse.

Suppose I am in my laboratory and a man enters who says that he desires to consult me, as a professor of chemistry, as to whether he had better swallow the contents of a vial which he holds in his hand. I reply to him: "Sir, I have no advice, as a professor of chemistry, to offer you as to what you shall swallow or refrain from swallowing. I perceive that the liquid contained in your vial is prussic acid. I will cheerfully state to you the action of prussic acid on any substance about which you may choose to inquire; but probably you had better, for your apparent purpose, go to Prof. S., the physiologist, who can more fully and readily than myself explain the precise action of prussic acid when taken into the stomach of a living being."

The inquirer now goes to Prof. S., and says that he desires to consult him, as a professor of physiology, as to whether he had better swallow the liquid which the chemist has told him is undilute prussic acid. Prof. S. replies: "Sir, should you consult me as a fellow being, I would not stand on ceremony, but frankly advise you to empty the contents of your vial into the sink. But if you insist on consulting me as a professor of physiology, I must reply that I have no advice to give. Physiology, sir, is a science; as such, it has nothing to do with precepts or prescriptions, but only with the relations of cause and effect within the field of animal life. As a student of that science, I inform you that, if you swallow the liquid, you will experience such and such sensations, and, at about

such a time, you will be dead. Since you still insist upon having advice as to whether you had better do this or not, I refer you to my neighbor, Dr. G., who is the professor, not of a science, but of an art. As such, it is his business to give advice regarding conduct. As such, he has a right to entertain the notion that certain things are good, and certain things evil; that the means calculated (as shown by the appropriate science or sciences) to bring about the good, are desirable; that the courses which (as shown by the appropriate science or sciences) lead to the evil, are undesirable. He would not be a physician unless he held that pain and death were evil; life and the absence of pain, good. What he is a physician for is to help his patients to avoid the evil and obtain the good. In doing this he will naturally seek to apply the largest and latest results of the *science* of physiology to the *art* of healing."

29. Distinction between Political Economy as a Science and as an Art.—"If," says Prof. Senior, "Political Economy is to be treated as a science, it may be defined as the science which states the laws regulating the production and distribution of wealth, so far as they depend on the action of the human mind. If it be treated as an art, it may be defined as the art which points out the institutions and habits most conducive to the production and accumulation of wealth; or, if the teacher ventures to take a wider view, as the art which points out the institutions and habits most conducive to that production, accumulation and distribution of wealth which is most favorable to the happiness of mankind."

30. Prof. Senior goes on to remark that, in the eighteenth century, political economy was treated as an art, a branch of statesmanship. Sir James Steuart so treated it. The French Physiocrats so regarded it. Even with Adam Smith, "the scientific portion of his work is merely an introduction to that which is practical."

Oddly enough, the statesman Turgot must be made an exception to the remark respecting the French Physiocrats. "It is remarkable," says Prof. Senior, "that the only man among the disciples of Quesnay* who was actually practicing

*See paragraph 48.

political economy as an art, is the only one who treated its principles as a science. His 'Réflexions sur la formation et la distribution des richesses,' published in 1774, is a purely scientific treatise. It contains not a word of precept, and might have been written by an ascetic, who believed wealth to be an evil."

Prof. Senior continues: "The English writers who have succeeded Adam Smith have generally set out by defining political economy as a science, and proceeded to treat it as an art. Mr. Ricardo is, however, an exception. His great work is little less scientific than that of Turgot. His abstinence from precept, and even from illustrations drawn from real life, is the more remarkable, as the subject of his treatise is 'Distribution,' the most practical branch of political economy, and 'Taxation,' the most practical branch of Distribution. The modern economists of France, Germany, Spain, Italy and America, so far as I am acquainted with their works, all treat political economy as an art."

31. We shall deal with Political Economy as a Science.—The inveterate disposition, which Prof. Senior thus notes, to abandon the investigation of principles for the formulation of precepts, has doubtless retarded greatly the progress of political economy. It can not be too strongly insisted on, that the economist, as such, has nothing to do with the questions, what men had better do; how nations should be governed; or what regulations should be made for their mutual intercourse. His business simply is to trace economic effects to their causes, leaving it to the philosopher of every-day life, to the moralist or the statesman, to teach how men and nations should act in view of the principles so established. The political economist,* for example, has no more

* A distinguished English Economist, quoting this remark, in the *Contemporary Review*, asks with some asperity, "What, then, should the political economist preach?" I answer, nothing. His business is to teach and not to preach. He acquits himself of his duty when he shows the relations of cause and effect within the field of industry, leaving it to statesmen, moralists and men of affairs to act for themselves, or to preach to others, with reference to what the political economist teaches.

call to preach free trade, as the policy of nations, than the physiologist to advocate monogamy as a legal institution.

Throughout this work until we reach Part VI, which will be in terms devoted to Some Applications of Economic Principles, the effort will be made to treat political economy strictly as a science. If at any point the writer lapses into expressions only suitable to the teacher of an art, it will be partly because of that strong predisposition which has been noted in almost all writers on this subject, and partly to the influence of example.

32. Is There a National Political Economy?—This is a question which has been much debated. The so-called protectionists have favored the view that each country has a political economy of its own. One writer of our own country has entitled his work "American Political Economy."

The controversy over this question arises out of the confusion produced, first, by the failure to distinguish between the science of political economy and the use of political economy in the art of statesmanship; secondly, by the different views taken of the proper premises of the science of political economy by the two schools (Par. 17) before referred to.

Those who say that there is an American Political Economy, for example, mean that the precepts derived from political economy, whether addressed to the legislator, or to the body of the people, should not be applied to America without reference to the peculiar constitution, conditions and needs of America. But a science has nothing to do with precepts or prescriptions. Rules of conduct belong to an art.

33. National and Race Characteristics.—Moreover, the notion that there is a political economy for each race of men, and even for each nation, has been fostered by the arbitrary character of the assumptions of what we have called the Ricardian school, and by the refusal to pay a reasonable regard to some of the most characteristic features of human nature and some of the most prominent facts of industrial society, embracing institutions and laws which vitally affect the production and distribution of wealth.

Thus, the *à priori* economist, in discussing the question

of wages, assumes, for the purposes of his reasoning, a body of laborers who are wholly intent on getting the largest remuneration ; who will, for any advantage, however slight, change their occupation, and with equal readiness their place of abode, at least within their own country ; who, moreover, are so intelligent and well-informed that no preference, economically, can exist on behalf of any other occupation or place of abode, without their knowing it, and, of course, acting at once upon it. The economist having created such a race of beings, whose likeness is found nowhere upon earth, proceeds to point out, it may be with great acuteness and accuracy, what the individual members thereof would do in various supposed cases, under the impulse of this or that economic force. His conclusions are put forth as "laws" of political economy.

Is it strange that an intelligent East Indian, reading these conclusions, should say, if this is political economy, it must be European political economy, and there should be a separate political economy for the East, since here, over vast regions, social and religious feelings absolutely prohibit multitudes of workmen from changing their occupation, for any reason ; while the almost uniform penury of the laboring class, their ignorance, superstition, and fear of change, combine to render movement from place to place tardy and difficult, if not, as in most cases, practically impossible ?

34. Relation of Political Economy to other Sciences.—Political Economy does not ascertain for itself a single one of the facts which form the premises of the economist. These are all derived from other sciences as data, *i. e.*, things given. From the physiologist, for instance, is obtained the fact of man's need of food to sustain life, from which is deduced the economic doctrine of minimum wages. From the physiologist, again, is obtained the fact of a strong disposition, arising from the sexual passion, to carry population beyond the limits of decent or comfortable subsistence, from which is deduced the much-abused doctrine known as Malthusianism. From the agricultural chemist is obtained the fact that, beyond a certain point, the application of capital and labor to land yields a

continually diminishing return, from which is deduced the doctrine of Rent. None of these facts does the economist ascertain for himself. He takes them, as the realized results of other sciences, and makes them the premises, the starting point, of his own.

Even the fact of the indisposition of men to strenuous exertion, from which is deduced the principle that they will, so far as they are intelligent and are left free to act, always buy in the cheapest market, is not found by the economist. It is furnished, ready to his hand, by the moral philosopher. The economist takes from all sciences, by turns, all facts which bear upon the one subject, wealth ; considers them only so far as they bear thereon ; and puts them together and builds them up into a "body of knowledge" which he calls the Science of Wealth, or Political Economy. Even in the field of prices and wages, the distinction should always be observed between the economic statistician, who finds the facts, and the economist, who puts the facts into their place in the industrial system.

35. Political Economy and Natural Theology.—Prof. Cliffe Leslie has shown the powerful influence exerted upon the economic views of Adam Smith, who, as Professor of Moral Philosophy in the University of Glasgow, had occasion to teach both Political Economy and Natural Theology, by the assumption of a beneficent natural order of society, to the disturbance of which by human institutions are due all the economic evils that afflict mankind. To this order-of-nature it should, according to Dr. Smith, be the unceasing effort of mankind to return ; and the political economist will fully discharge himself of his mission as an investigator and teacher when he points out the path by which mankind may make their way back to that state in which all things economic will work together for the good of the race.

Now, this subjection of political economy to the interests of natural theology is wrong. I do not say that good natural theology will make bad political economy. I content myself with asserting that political economy has just as much right to be independent of natural theology, as have astronomy and geology. There was a time when the students of those