SCIENCE.—SUPPLEMENT.

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ANOTHER VIEW OF ECONOMIC LAWS AND METHODS.

WHEN the editor of *Science* invited me to take part in a discussion upon economic principles and methods, I at first declined, because of my doubt whether any fruitful results would follow; and my final acceptance was due to the thought that the professed economists in this country were not so widely apart in their views as the expression which they sometimes use would seem to indicate, and that through discussion they might perhaps become better acquainted with each other's purposes and methods. It would be premature to say that there is no hope of realizing such an expectation, although the rigidity with which the lines between the old and the new in economy are drawn is not very encouraging. Nor is this impression wholly the result of the aggressive statements of the representatives of the 'new school;' the criticisms offered by Mr. Hadley under the title 'Economic laws and methods,' present views which by universal consent are the exclusive property of the 'old school.'

Mr. Hadley's paper is professedly a criticism upon my presentation of the relation that exists between economics and jurisprudence, but it suggests much more than was directly touched in that discussion; and, in meeting the editor's request for a 'reply,' I may perhaps be permitted the same liberty, and state, in as concise a manner as possible, the views which I hold respecting the nature and purpose of political economy, and the method of study which its profitable prosecution imposes.

If asked to define political economy, I should say that political economy treats of industrial society. Its purpose as an analytic science is to explain the industrial actions of men. Its purpose as a constructive science is to discover a scientific and rational basis for the formation and government of industrial society.

But, it may be asked, under what conditions can political economy be said to have attained its scientific purpose? When is an industrial fact satisfactorily explained? I answer, when it is referred to some general truth which, either for the sake of convenience or because our limited intelligence will not permit us to press the inquiry further, must be regarded as final. Truths of this sort are fundamental in economics, and are capable of being classified under three heads. (*a*) The first class embraces what is ordinarily called the laws of human nature. Such truths are discovered by a study of one's self, by a study of history, and by a study of statistics. There can be no quarrel between the old and the new economists as to the propriety of admitting such facts. The quarrel begins when the members of the old school assert that 'a few simple laws of human nature' furnish adequate material out of which to construct an economic science capable of explaining all industrial facts. (*b*) The truths of physical nature to which all industrial activity must conform are likewise final for purposes of explanation. Why do men go west to take up new lands? Because, to quote from Mr. Hadley, they desire "to obtain the maximum of satisfaction for the minimum of sacrifice." This, however, does not explain the fact of migrations. One does not understand why a given quantity of satisfaction can be secured for less sacrifice by an agriculturalist in the west than if he increased the numbers already living on the lands of the east, until he discovers the physical law of the productivity of land known as the law of diminishing returns. Again, it is an industrial fact that the Christian world is growing rich. Is it enough to trace this fact to the permanent desire on the part of men to grow rich? Do we not understand it better when we learn that the latent energy in a ton of coal is equal to eleven million times its own weight, and that the available energy when the best machines are used is equal to one million times its own weight? If, then, physical laws are essential to a satisfactory explanation of industrial facts, and if such explanation is the scientific purpose of economics, are we not justified in admitting such physical laws as material for the construction of the science? But, says the objector, English economy recognizes physical laws. The law of diminishing returns is called by Mr. Mill the fundamental law of economy. This is certainly true, and this is why it is so difficult for me to understand the plan of architecture according to which English economists have built their science. I cannot appreciate the necessity of bringing in at the back door any facts essential to the explanation of industrial phenomena. (*c*) The third class of final truths is disclosed when once the explanation of observed facts is traceable to the legal structure of society. Why were wages in England between the years

1200 and 1400 permanent? Why has the principle of competition exerted a greater influence since 1500 than before? Why in the year 1800 in England was the woollen industry largely controlled by journeymen, while in the cotton industry the majority of workers had never served an apprenticeship? If these questions are not legitimate ones to put to the economist, I do not know who is to deal with them; nor do I know how he can answer them except by referring them to the legal structure of society which prevailed at the time considered. For the same reasons, therefore, as were presented above, the lego-historic facts — to borrow a phrase from Lasalle — are material out of which to construct an economic science. It is true that such facts are not permanent, and when we call a truth which rests upon them a final truth, our language must be accepted with limitations; but it is a distinctive feature of the historical school to recognize limitations in periods studied. Its members are not ambitious to cover all times and all peoples with their generalizations, for they well know that such generalizations would be too thin for any use. I have brought this classification prominently into view, because Mr. Hadley insists so strongly that economics "is built out of a few simple laws of human nature," and criticises me for adding to this, as equally necessary for explaining the phenomena of industrial society, the physical and legal surroundings of men. The expression used in my former paper must have been loose, or so candid a critic and so clear a thinker would not have thus shot by the mark. And I am inclined to the opinion also that the real difference here brought to view pertains primarily to form of presentation; its discussion, therefore, would be scholastic rather than scholarly.

Still there are certain radical differences between the views expressed or implied in Mr. Hadley's paper and those which I entertain; and, should circumstances ever render it necessary for me to nail a thesis on his lecture-room door, it would include the following protests.

I protest, in the first place, against such free and unguarded use of analogy as argument. Because certain things are true in physical science, it does not follow that similar things are true in social science. One may be well versed in the methods of successful investigation in the physical sciences, and yet not possess the mental equipment necessary to arrive at truth through the intricacies of social relations. And why? For two reasons. In the one case, the forces considered are permanent and reliable; in the other, some of the forces are subject to constant variation. Development of a physical science consists in the discovery of truths which are assumed always to have existed, nor has such an assumption so far in our experience proved the source of error. Development of a social science, on the other hand, consists partly in the new discovery of old truths, and partly *in observing new truths to emerge from the growth of the social organism.* If this be true, is it not illogical to rely upon analogy? Again, the study of physical science is not complicated by the fact that the forces considered have a conscious purpose, and, within limits, are self-directing. But in social sciences this is unfortunately the case, at least the theory of social science with which the latest phase of economic science allies itself holds strenuously to the idea of a self-conditioning social organism. In this respect, therefore, analogy fails.

I protest, in the second place, against the relation that is assumed to exist between the science and the art of economics. It appears to me that they who make most use of these phrases fall also into the error of relying too implicitly upon analogy. What is said of the bearing of a science on an art, which is quite fruitful when applied to a physical science and the art of mechanical invention, ceases to have any clear-cut meaning when imputed to social relations. The reason is, that what is termed 'the art of economics' is itself one of the elements which must be admitted by the 'science of economics' in order to explain the laws of its own development. If this be true (and it must be admitted if society is an organism of conscious purpose), there is no such sharp line of distinction between the science and the art of economics as has been commonly supposed. Without denying an element of truth to what Mr. Mill so admirably states in the last book of his 'Logic,' I still insist that it is preferable to speak of a science of economics which is at the same time analytic and constructive.

I protest, in the third place, against the use of the astronomical method of investigation in the social sciences. Should my readers desire to know in what this method consists more perfectly than may be learned from Mr. Hadley's paper, they will find it presented at length in Cairnes's 'Logical method of political economy.' Indeed, that book might well be termed a handbook for the use of students in economic observatories. The method, in short, consists in this: to build a system of thought on the assumption that a certain line is straight, and then to take a squint to see how crooked it is. I would not, of course, deny that this method is, in itself considered, logical, nor that it is fruitful when employed in astronomy: my only objection is, that in economics it is of no sort of use. It has not led to a single

discovery worth the mention since the time of Mill. Ideas may have been born to those who have spent the night-watches with this method, but, if so, no one ever heard the children peep.

There are other protests which might be added. Economy is not an independent study; it is a dependent subordinate study, which first finds its true place when framed into the study of society as a whole. But says Mr. Hadley, "a scientific part is a better starting-point than an unscientific whole,"— a conclusion which he reaches after discussing the undulatory theory of light, and a conclusion which shows how dangerous it is to depend on analogy rather than on analysis. There is no such thing as a scientific treatment of one function of a developing organism which does not recognize the essential and permanent relations of that function to other forms of activity by the same organism. Nor are all economic truths 'authoritative and rigid.' Most of them are dependent and relative. There is no meaning in the science of history otherwise. HENRY C. ADAMS.

CHINESE REVENUES AND SYSTEMS OF TAXATION.

THE pecuniary relations which China is now more rapidly developing with foreign nations, together with the greater demand for foreign capital, will make of interest the following account of her revenues and systems of taxation, for which the writer is indebted to an extended article in the late numbers of the Austrian *Monatschrift für den orient.*

At the outset many difficulties are encountered in the endeavor to obtain a just conception of Chinese revenues and resources, not from any dislike on the part of the government to hinder the acquirement by foreign nations of such knowledge, but because the details of the antiquated and involved systems are not understood by the authorities themselves, notwithstanding their earnest desire to introduce a thorough reform. The imposition and control of taxes rest wholly and absolutely in the hands of the central government, under the administration of the financial minister at Pekin. What the revenues from any given province may be, the central officials, however, can give no definite information; a certain amount is demanded and usually obtained, but the details are left in the hands of the subordinate officers. The methods require an army of officials, who often make themselves enormously rich at the expense of the tax-payers. They are unusually crude in many respects, the outgrowth of old customs and habits, which, unfortunately, do not encourage much hope of improvement so long as the ultimate authority rests, as it does now, absolutely in the fiat of the chief ruling power.

The chief disadvantage under which the taxation system labors consists in the fact that the raising of taxes is farmed out. The contractors bind themselves to furnish a certain quota or sum, but at the same time enjoy the monstrous freedom of levying what they can from the people, and placing the excess in their own pockets. This may not have been the original intent, but it has become so virtually. It is not in human nature to expect, that when, in any given year, a deficit has been made up from the contractor's own resources, the following year he will carefully account for every cash[1] that he may have received in excess. It thus results that there is a constant dispute between the central and provincial authorities. The former, for instance, may demand a sum of 50,000 taels, for the emperor's household expenses, from the salt director of some province, who calls heaven and earth to bear witness that he cannot furnish another cash without bankrupting himself; nevertheless he complies with the required demand, and grows old and fat in the bargain.

Such singular, one may say pitiful, systems for a nation in many respects so intelligent as the Chinese, furnish many erroneous opinions of the nation's poverty, although there can be no doubt that the government has been in a continual state of impecuniosity since the beginning of the present century, existing from hand to mouth, and not becoming involved in debt for the simple reason that it cannot. Had the government not found in recent years a new resource in import duties, to which indeed it was compelled to take recourse, it would have been reduced to very great straits.

Two notable events in the last few decades have contributed to bring about a partial revolution in the financial systems, viz., the Taiping rebellion, and the opening up of the country to foreign nations. The first caused the almost entire abolition of the old systems of land-tax over a large part of the empire; the latter opened up the new resource of import duties, — a source of income which, were it properly managed and husbanded, would soon exceed all the others together. Yet another development since the Taiping rebellion is the so-called arbitrary *likin*, or toll-tax, which has become a very important source of revenue. All these changes render the older accounts of Chinese revenues and taxation unreliable and incorrect for the real condition of affairs at present.

The state revenues consist in, 1°, the land-tax; 2°, inland and import duties; 3°, the salt-tax or monopoly; 4°, various smaller taxes and licenses

[1] 1600 cash = 1 tael = about $1.43.