BUCKLE HENRY THOMAS

HISTORY OF CIVILIZATION IN ENGLAND, VOL. 1 OF 3

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Содержание

Henry Thomas Buckle
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CHAPTER I
STATEMENT OF THE RESOURCES FOR INVESTIGATING HISTORY, AND PROOFS OF THE REGULARITY OF HUMAN ACTIONS. THESE ACTIONS ARE GOVERNED BY MENTAL AND PHYSICAL LAWS: THEREFORE BOTH SETS OF LAWS MUST BE STUDIED, AND THERE CAN BE NO HISTORY WITHOUT THE NATURAL SCIENCES

Of all the great branches of human knowledge, history is that upon which most has been written, and which has always been most popular. And it seems to be the general opinion that the success of historians has, on the whole, been equal to their industry; and that if on this subject much has been studied, much also is understood.

This confidence in the value of history is very widely diffused, as we see in the extent to which it is read, and in the share it occupies in all plans of education. Nor can it be denied that, in a certain point of view, such confidence is perfectly justifiable. It cannot be denied that materials have been collected which, when looked at in the aggregate, have a rich and imposing appearance. The political and military annals of all the great countries in Europe, and of most of those out of Europe, have been carefully compiled, put together in a convenient form, and the evidence on which they rest has been tolerably well sifted. Great attention has been paid to the history of legislation, also to that of religion: while considerable, though inferior, labour has been employed in tracing the progress of science, of literature, of the fine arts, of useful inventions, and, latterly, of the manners and comforts of the people. In order to increase our knowledge of the past, antiquities of every kind have been examined; the sites of ancient cities have been laid bare, coins dug up and deciphered, inscriptions copied, alphabets restored, hieroglyphics interpreted, and, in some instances, long-forgotten languages reconstructed and re-arranged. Several of the laws which regulate the changes of human speech have been discovered, and, in the hands of philologists, have been made to elucidate even the most obscure periods in the early migration of nations. Political economy has been raised to a science, and by it much light has been thrown on the causes of that unequal distribution of wealth which is the most fertile source of social disturbance. Statistics have been so sedulously cultivated, that we have the most extensive information, not only respecting the material interests of men, but also respecting their moral peculiarities; such as, the amount of different crimes, the proportion they bear to each other, and the influence exercised over them by age, sex, education, and the like. With this great movement physical geography has kept pace: the phenomena of climate have been registered, mountains measured, rivers surveyed and tracked to their source, natural productions of all kinds carefully studied, and their hidden properties unfolded: while every food which sustains life has been chemically analysed, its constituents numbered and weighed, and the nature of the connexion between them and the human frame has, in many cases, been satisfactorily ascertained. At the same time, and that nothing should be left undone which might enlarge our knowledge of the events by which man is affected, there have been instituted circumstantial researches in many other

departments; so that in regard to the most civilized people, we are now acquainted with the rate of their mortality, of their marriages, the proportion of their births, the character of their employments, and the fluctuations both in their wages and in the prices of the commodities necessary to their existence. These and similar facts have been collected, methodized, and are ripe for use. Such results, which form, as it were, the anatomy of a nation, are remarkable for their minuteness; and to them there have been joined other results less minute, but more extensive. Not only have the actions and characteristics of the great nations been recorded, but a prodigious number of different tribes in all the parts of the known world have been visited and described by travellers, thus enabling us to compare the condition of mankind in every stage of civilization, and under every variety of circumstance. When we moreover add, that this curiosity respecting our fellow-creatures is apparently insatiable; that it is constantly increasing; that the means of gratifying it are also increasing, and that most of the observations which have been made are still preserved; – when we put all these things together, we may form a faint idea of the immense value of that vast body of facts which we now possess, and by the aid of which the progress of mankind is to be investigated.

But if, on the other hand, we are to describe the use that has been made of these materials, we must draw a very different picture. The unfortunate peculiarity of the history of man is, that although its separate parts have been examined with considerable ability, hardly any one has attempted to combine them into a whole, and ascertain the way in which they are connected with each other. In all the other great fields of inquiry, the necessity of generalization is universally admitted, and noble efforts are being made to rise from particular facts in order to discover the laws by which those facts are governed. So far, however, is this from being the usual course of historians, that among them a strange idea prevails, that their business is merely to relate events, which they may occasionally enliven by such moral and political reflections as seem likely to be useful. According to this scheme, any author who from indolence of thought, or from natural incapacity, is unfit to deal with the highest branches of knowledge, has only to pass some years in reading a certain number of books, and then he is qualified to be an historian; he is able to write the history of a great people, and his work becomes an authority on the subject which it professes to treat.

The establishment of this narrow standard has led to results very prejudicial to the progress of our knowledge. Owing to it, historians, taken as a body, have never recognized the necessity of such a wide and preliminary study as would enable them to grasp their subject in the whole of its natural relations. Hence the singular spectacle of one historian being ignorant of political economy; another knowing nothing of law; another nothing of ecclesiastical affairs and changes of opinion; another neglecting the philosophy of statistics, and another physical science: although these topics are the most essential of all, inasmuch as they comprise the principal circumstances by which the temper and character of mankind have been affected, and in which they are displayed. These important pursuits being, however, cultivated, some by one man, and some by another, have been isolated rather than united: the aid which might be derived from analogy and from mutual illustration has been lost; and no disposition has been shown to concentrate them upon history, of which they are, properly speaking, the necessary components.

Since the early part of the eighteenth century, a few great thinkers have indeed arisen, who have deplored the backwardness of history, and have done everything in their power to remedy it. But these instances have been extremely rare: so rare, that in the whole literature of Europe there are not more than three or four really original works which contain a systematic attempt to investigate the history of man according to those exhaustive methods which in other branches of knowledge have proved successful, and by which alone empirical observations can be raised to scientific truths.

Among historians in general, we find, after the sixteenth century, and especially during the last hundred years, several indications of an increasing comprehensiveness of view, and of a willingness to incorporate into their works subjects which they would formerly have excluded. By this means their assemblage of topics has become more diversified, and the mere collection and relative position of

parallel facts has occasionally suggested generalizations no traces of which can be found in the earlier literature of Europe. This has been a great gain, in so far as it has familiarized historians with a wider range of thought, and encouraged those habits of speculation, which, though liable to abuse, are the essential condition of all real knowledge, because without them no science can be constructed.

But, notwithstanding that the prospects of historical literature are certainly more cheering now than in any former age, it must be allowed that, with extremely few exceptions, they are only prospects, and that as yet scarcely anything has been done towards discovering the principles which govern the character and destiny of nations. What has been actually effected I shall endeavour to estimate in another part of this introduction: at present it is enough to say, that for all the higher purposes of human thought history is still miserably deficient, and presents that confused and anarchical appearance natural to a subject of which the laws are unknown, and even the foundation unsettled.[1]

Our acquaintance with history being so imperfect, while our materials are so numerous, it seems desirable that something should be done on a scale far larger than has hitherto been attempted, and that a strenuous effort should be made to bring up this great department of inquiry to a level with other departments, in order that we may maintain the balance and harmony of our knowledge. It is in this spirit that the present work has been conceived. To make the execution of it fully equal to the conception is impossible: still I hope to accomplish for the history of man something equivalent, or at all events analogous, to what has been effected by other inquirers for the different branches of natural science. In regard to nature, events apparently the most irregular and capricious have been explained, and have been shown to be in accordance with certain fixed and universal laws. This has been done because men of ability, and, above all, men of patient, untiring thought, have studied natural events with the view of discovering their regularity: and if human events were subjected to a similar treatment, we have every right to expect similar results. For it is clear that they who affirm that the facts of history are incapable of being generalized, take for granted the very question at issue. Indeed they do more than this. They not only assume what they cannot prove, but they assume what in the present state of knowledge is highly improbable. Whoever is at all acquainted with what has been done during the last two centuries, must be aware that every generation demonstrates some events to be regular and predictable, which the preceding generation had declared to be irregular and unpredictable: so that the marked tendency of advancing civilization is to strengthen our belief in the universality of order, of method, and of law. This being the case, it follows that if any facts, or class of facts, have not yet been reduced to order, we, so far from pronouncing them to be irreducible, should rather be guided by our experience of the past, and should admit the probability that what we now call inexplicable will at some future time be explained. This expectation of discovering regularity in the midst of confusion is so familiar to scientific men, that among the most eminent of them it becomes an article of faith: and if the same expectation is not generally found among historians, it must be ascribed partly to their being of inferior ability to the investigators of nature, and partly to the greater complexity of those social phenomena with which their studies are concerned.

Both these causes have retarded the creation of the science of history. The most celebrated historians are manifestly inferior to the most successful cultivators of physical science: no one having devoted himself to history who in point of intellect is at all to be compared with Kepler, Newton, or many others that might be named.[2] And as to the greater complexity of the phenomena, the philosophic historian is opposed by difficulties far more formidable than is the student of nature; since, while on the one hand, his observations are more liable to those causes of error which arise

[1] A living writer, who has done more than any other to raise the standard of history, contemptuously notices 'l'incohérente compilation de faits déjà improprement qualifiée *d'histoire*.' *Comte*, *Philosophie Positive*, vol. v. p. 18. There is much in the method and in the conclusions of this great work with which I cannot agree; but it would be unjust to deny its extraordinary merits.

[2] I speak merely of those who have made history their main pursuit. Bacon wrote on it, but only as a subordinate object; and it evidently cost him nothing like the thought which he devoted to other subjects.

from prejudice and passion, he, on the other hand, is unable to employ the great physical resource of experiment, by which we can often simplify even the most intricate problems in the external world.

It is not, therefore, surprising that the study of the movements of Man should be still in its infancy, as compared with the advanced state of the study of the movements of Nature. Indeed the difference between the progress of the two pursuits is so great, that while in physics the regularity of events, and the power of predicting them, are often taken for granted even in cases still unproved, a similar regularity is in history not only not taken for granted, but is actually denied. Hence it is that whoever wishes to raise history to a level with other branches of knowledge, is met by a preliminary obstacle; since he is told that in the affairs of men there is something mysterious and providential, which makes them impervious to our investigations, and which will always hide from us their future course. To this it might be sufficient to reply, that such an assertion is gratuitous; that it is by its nature incapable of proof; and that it is moreover opposed by the notorious fact that everywhere else increasing knowledge is accompanied by an increasing confidence in the uniformity with which, under the same circumstances, the same events must succeed each other. It will, however, be more satisfactory to probe the difficulty deeper, and inquire at once into the foundation of the common opinion that history must always remain in its present empirical state, and can never be raised to the rank of a science. We shall thus be led to one vast question, which indeed lies at the root of the whole subject, and is simply this: Are the actions of men, and therefore of societies, governed by fixed laws, or are they the result either of chance or of supernatural interference? The discussion of these alternatives will suggest some speculations of considerable interest.

For, in reference to this matter, there are two doctrines, which appear to represent different stages of civilization. According to the first doctrine, every event is single and isolated, and is merely considered as the result of a blind chance. This opinion, which is most natural to a perfectly ignorant people, would soon be weakened by that extension of experience which supplies a knowledge of those uniformities of succession and of co-existence that nature constantly presents. If, for example, wandering tribes, without the least tincture of civilization, lived entirely by hunting and fishing, they might well suppose that the appearance of their necessary food was the result of some accident which admitted of no explanation. The irregularity of the supply, and the apparent caprice with which it was sometimes abundant and sometimes scanty, would prevent them from suspecting anything like method in the arrangements of nature; nor could their minds even conceive the existence of those general principles which govern the order of events, and by a knowledge of which we are often able to predict their future course. But when such tribes advance into the agricultural state, they, for the first time, use a food of which not only the appearance, but the very existence, seems to be the result of their own act. What they sow, that likewise do they reap. The provision necessary for their wants is brought more immediately under their own control, and is more palpably the consequence of their own labour. They perceive a distinct plan, and a regular uniformity of sequence, in the relation which the seed they put into the ground bears to the corn when arrived at maturity. They are now able to look to the future, not indeed with certainty, but with a confidence infinitely greater than they could have felt in their former and more precarious pursuits.[3] Hence there arises a dim idea of the stability of events; and for the first time there begins to dawn upon the mind a faint conception of what at a later period are called the Laws of Nature. Every step in the great progress will make their view of this more clear. As their observations accumulate, and as their experience extends over a wider surface, they meet with uniformities that they had never suspected to exist, and the discovery of which weakens that doctrine of chance with which they had originally set out. Yet a little further, and a taste for abstract reasoning springs up; and then some among them generalize the observations that have

[3] Some of the moral consequences of thus diminishing the precariousness of food are noticed by M. Charles Comte in his *Traité de Législation*, vol. ii. pp. 273–275. Compare *Mill's History of India*, vol. i. pp. 180–181. But both these able writers have omitted to observe that the change facilitates a perception of the regularity of phenomena.

been made, and despising the old popular opinion, believe that every event is linked to its antecedent by an inevitable connexion, that such antecedent is connected with a preceding fact; and that thus the whole world forms a necessary chain, in which indeed each man may play his part, but can by no means determine what that part shall be.

Thus it is that, in the ordinary march of society, an increasing perception of the regularity of nature destroys the doctrine of Chance, and replaces it by that of Necessary Connexion. And it is, I think, highly probable that out of these two doctrines of Chance and Necessity there have respectively arisen the subsequent dogmas of Free Will and Predestination. Nor is it difficult to understand the manner in which, in a more advanced state of society, this metamorphosis would occur. In every country, as soon as the accumulation of wealth has reached a certain point, the produce of each man's labour becomes more than sufficient for his own support: it is therefore no longer necessary that all should work; and there is formed a separate class, the members of which pass their lives for the most part in the pursuit of pleasure; a very few, however, in the acquisition and diffusion of knowledge. Among these last there are always found some who, neglecting external events, turn their attention to the study of their own minds;[4] and such men, when possessed of great abilities, become the founders of new philosophies and new religions, which often exercise immense influence over the people who receive them. But the authors of these systems are themselves affected by the character of the age in which they live. It is impossible for any man to escape the pressure of surrounding opinions; and what is called a new philosophy or a new religion is generally not so much a creation of fresh ideas, but rather a new direction given to ideas already current among contemporary thinkers.[5] Thus, in the case now before us, the doctrine of Chance in the external world corresponds to that of Free Will in the internal: while the other doctrine of Necessary Connexion is equally analogous to that of Predestination; the only difference being that the first is a development by the metaphysician, the second by the theologian. In the first instance, the metaphysician setting out with the doctrine of Chance, carries into the study of the mind this arbitrary and irresponsible principle, which in its new field becomes Free Will; an expression by which all difficulties seem to be removed, since perfect freedom, itself the cause of all actions, is caused by none, but, like the doctrine of Chance, is an ultimate fact admitting of no further explanation.[6] In the second instance, the theologian taking up the doctrine of Necessary Connexion recasts it into a religious shape; and his mind being already

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[4] On the relation between this and the previous creation of wealth, see *Tennemann*, *Geschichte der Philosophie*, vol. i. p. 30; 'Ein gewisser Grad von Cultur und Wohlstand ist eine nothwendige äussere Bedingung der Entwickelung des philosophischen Geistes. So lange der Mensch noch mit den Mitteln seiner Existenz und der Befriedigung seiner thierischen Bedürfnisse beschäftiget ist, so lange gehet die Entwickelung und Bildung seiner Geisteskräfte nur langsam von statten, und er nähert sich nur Schritt vor Schritt einer freiern Vernunftthätigkeit.' … 'Daher finden wir, dass man nur in denen Nationen anfing zu philosophiren, welche sich zu einer beträchtlichen Stufe des Wohlstandes und der Cultur emporgehoben hatten.' Hence, as I shall endeavour to prove in the next chapter, the immense importance of the physical phenomena which precede and often control the metaphysical. In the history of the Greek mind we can distinctly trace the passage from physical to metaphysical inquiries. See *Grote's History of Greece*, vol. iv. p. 519, edit. 1847. That the atomic doctrine, in its relation to chance, was a natural precursor of Platonism, is remarked in *Broussais*, *Examen des Doctrines Médicales*, vol. i. pp. 53, 54, an able though one-sided work. Compare, respecting the Chance of the atomists, *Ritter's History of Ancient Philosophy*, vol. i. p. 553; an hypothesis, as Ritter says, 'destructive of all inner energy;' consequently antagonistic to the psychological hypothesis which subsequently sprang up and conquered it. That physical researches came first, is moreover attested by Diogenes Laertius: Μέρη δὲ φιλοσοφίας τρία, φυσικὸν, ἠθικὸν διαλεκτικόν· φυσικὸν μὲν, τὸ περὶ κόσμου, καὶ τῶν ἐν αυτῷ· ἠθικὸν δὲ, τὸ περὶ βιου καὶ τῶυ πρὸς ἡμᾶς· διαλεκτικὸν δὲ, τὸ ἀμφοτέρων τοὺς λόγους τὸ πυσβεῦου· καὶ μέχρι μὲν ' Αρχελάου τὸ φυσικὸν εἶδος ἦν ἀπὸ δὲ Σωκράτους, ὡς προείρηται, τὸ ἠθικόν· ἀπὸ δὲ Ζήνωνος τοῦ Ἐλεάτον, τὸ διαλεκτικόν. *De Vitis Philosophorum Proœm.* segm. 18, vol. i. p. 12: compare lib. ii. segm. 16, vol. i. p. 89.

[5] Beausobre has some good remarks on this in his learned work *Histoire Critique de Manichée*, vol. i. p. 179, where he says that the great religious heresies have been founded on previous philosophies. Certainly no one acquainted with the history of opinions will admit the sweeping assertion of M. Stahl that 'la philosophie d'un peuple a sa racine dans sa théologie.' *Klimrath*, *Travaux*, vol. ii. p. 454, Paris, 1843.

[6] 'Also ist ein Wille, dem die blose gesetzgebende Form der Maxime allein zum Gesetze dienen kann, ein freier Wille.' *Kritik der praktischen Vernunft* in *Kant's Werke*, vol. iv. p. 128. 'Hat selber für sich eigentlich keinen Bestimmungsgrund.' *Metaphysik der Sitten* in *Werke*, vol. v. p. 12. 'Die unbedingte Causalität der Ursache.' *Kritik der reinen Vernunft* in *Werke*, vol. ii. p. 339. See also *Prolegomena zu jeder künftigen Metaphysik* in vol. iii. p. 268.

full of conceptions of order and of uniformity, he naturally ascribes such undeviating regularity to the prescience of Supreme Power; and thus to the magnificent notion of One God there is added the dogma that by Him all things have from the beginning been absolutely pre-determined and preordained.

These opposite doctrines of free will and predestination[7] do, no doubt, supply a safe and simple solution of the obscurities of our being; and as they are easily understood, they are so suited to the average capacity of the human mind, that even at the present day an immense majority of men are divided between them; and they have not only corrupted the sources of our knowledge, but have given rise to religious sects, whose mutual animosities have disturbed society, and too often embittered the relations of private life. Among the more advanced European thinkers there is, however, a growing opinion that both doctrines are wrong or, at all events, that we have no sufficient evidence of their truth. And as this is a matter of great moment, it is important, before we proceed further, to clear up as much of it as the difficulties inherent in these subjects will enable us to do.

Whatever doubts may be thrown on the account which I have given of the probable origin of the ideas of free will and predestination, there can, at all events, be no dispute as to the foundation on which those ideas are now actually based. The theory of predestination is founded on a theological hypothesis; that of free will on a metaphysical hypothesis. The advocates of the first proceed on a supposition for which, to say the least of it, they have as yet brought forward no good evidence. They require us to believe that the Author of Creation, whose beneficence they at the same time willingly allow, has, notwithstanding His supreme goodness, made an arbitrary distinction between the elect and the non-elect; that He has from all eternity doomed to perdition millions of creatures yet unborn, and whom His act alone can call into existence: and that He has done this, not in virtue of any principle of justice, but by a mere stretch of despotic power.[8] This doctrine owes its authority among Protestants to the dark though powerful mind of Calvin; but in the early Church it was first systematically methodized by Augustin, who appears to have borrowed it from the Manicheans.[9] At all events, and putting aside its incompatibility with other notions which are supposed to be fundamental,[10] it must, in a scientific investigation, be regarded as a barren hypothesis, because, being beyond the province of our knowledge, we have no means of ascertaining either its truth or its falsehood.

The other doctrine, which has long been celebrated under the name of Free Will, is connected with Arminianism; but it in reality rests on the metaphysical dogma of the supremacy of human consciousness. Every man, it is alleged, feels and knows that he is a free agent: nor can any subtleties

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[7] That these doctrines, when treated according to the ordinary methods of reasoning, not only oppose but exclude each other, would be universally admitted if it were not for a desire generally felt to save certain parts of each: it being thought dangerous to give up free will on account of weakening moral responsibility, and equally dangerous to give up predestination on account of impugning the power of God. Various attempts have therefore been made to reconcile liberty with necessity, and make the freedom of man harmonize with the foreknowledge of the Deity. Compare on this point a remarkable letter from Locke to Molyneux (*Locke's Works*, vol. viii. p. 305), with the argument in one of Bentley's Sermons (*Monk's Life of Bentley*, vol. ii. pp. 7, 8); also *Ritter's Hist. of Ancient Philosophy*, vol. iv. pp. 143, 144; *Tennemann*, *Gesch. der Philosophie*, vol. iv. pp. 301–304; *Copleston's Inquiry into the Doctrines of Necessity and Predestination*, pp. 6, 7, 46, 69, 70, 85, 92, 108, 136; *Mosheim's Ecclesiastical Hist.*, vol. i. p. 207, vol. ii. p. 96; *Neander's Hist. of the Church*, vol. iv. pp. 294, 389–391; *Bishop of Lincoln on Tertullian*, 1845, p. 323; *Hodgson on Buddhism*, in *Transac. of Asiatic Society*, vol. ii. p. 232.

[8] Even Ambrose, who never went so far as Augustin, states this principle in its repulsive nakedness: 'Deus quos dignat vocat, quos vult religiosos facit.' *Neander*, vol. iv. p. 287. Calvin declares 'that God, in predestinating from all eternity one part of mankind to everlasting happiness, and another to endless misery, was led to make this distinction by no other motive than His own good pleasure and free will.' *Mosheim's Eccles. Hist.*, vol. ii. p. 103, see also p. 100; and *Carwithen's Hist. of the Church of England*, vol. i. p. 552.

[9] On the Manichæan origin of Augustin's opinions, compare *Potter*, *Esprit de l'Eglise*, vol. ii. p. 171, Paris, 1821; *Tomline's Refutation of Calvinism*, 1817, pp. 571–576; *Southey's Book of the Church*, 1824, vol. i. pp. 301, 302; *Matter*, *Hist. du Gnosticisme*, 1828, vol. i. p. 325. However, Beausobre (*Histoire de Manichée*, vol. ii. pp. 33–40) seems to have proved a difference between the election of Augustin and that of Basilides.

[10] On the absurdity of 'an omnipotent arbitrary Deity,' and on the incongruity of such a combination with φύσει καλὸν καὶ δίκαιον, see *Cudworth's Intellect. Syst.*, vol. i. pp. 45, 419, vol. iii. p. 241, vol. iv. p. 160. See also *Theodicee* in *Kant's Werke*, vol. vi. pp. 141, 142, and *Metaphysik der Sitten* in vol. v. p. 332, upon 'den göttlichen Zweck in Ansehung des menschlichen Geschlechts.'

of argument do away with our consciousness of possessing a free will.[11] Now the existence of this supreme jurisdiction, which is thus to set at defiance all the ordinary methods of reasoning, involves two assumptions: of which the first, though possibly true, has never been proved; and the other is unquestionably false. These assumptions are, that there is an independent faculty called consciousness, and that the dictates of that faculty are infallible. But, in the first place, it is by no means certain that consciousness is a faculty; and some of the ablest thinkers have been of opinion that it is merely a state or condition of the mind.[12] Should this turn out to be the case, the argument falls to the ground; since, even if we admit that all the faculties of the mind, when completely exercised, are equally accurate, no one will make the same claim for every condition into which the mind itself may be casually thrown. However, waiving this objection, we may, in the second place, reply, that even if consciousness is a faculty, we have the testimony of all history to prove its extreme fallibility.[13] All the great stages through which, in the progress of civilization, the human race has successively passed, have been characterized by certain mental peculiarities or convictions, which have left their impress upon the religion, the philosophy, and the morals of the age. Each of these convictions has been to one period a matter of faith, to another a matter for derision;[14] and each of them has, in its own epoch, been as intimately bound up with the minds of men, and become as much a part of their consciousness, as is that opinion which we now term freedom of the will. Yet it is impossible that all these products of consciousness can be true, because many of them contradict each other. Unless, therefore, in different ages there are different standards of truth, it is clear that the testimony of a man's consciousness is no proof of an opinion being true; for if it were so, then two propositions diametrically opposed to each other might both be equally accurate. Besides this, another view may be drawn from the common operations of ordinary life. Are we not in certain circumstances conscious of the existence of spectres and phantoms; and yet is it not generally admitted that such beings have no existence at all? Should it

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[11] Johnson said to Boswell, 'Sir, we *know* our will is free, and there's an end on't.' *Boswell's Life of Johnson*, edit. Croker, 1848, p. 203. 'La question: Sommes-nous libres? me paraît au-dessous de la discussion. Elle est résolue par le témoignage de la conscience attestant que dans certains cas nous pourrions faire le contraire de ce que nous faisons.' *Cousin*, *Hist. de la Philosophie*, I. Série, vol. i. pp. 190, 191. 'Die Freiheit des Menschen, als moralischen Wesens, gründet sich auf das sittliche Bewusstseyn.' *Tennemann*, *Gesch. der Philosophie*, vol. v. p. 161. That this is the only ground for believing in the freedom of the will is so evident, that we need not notice the mystical proof of Philo (*Ritter's Ancient Philosophy*, vol. iv. p. 447); nor the physical one of the Basilidian monads (*Beausobre*, *Hist. de Manichée*, vol. ii. p. 23); still less the argument of Bardesanes, who thought to demonstrate freedom by the variety of human customs! *Matter*, *Hist. du Gnosticisme*, vol. i. p. 323, which should be compared with *Burdach's Physiologie comme Science d'Observation*, vol. v. p. 50, Paris, 1839.

[12] Mr. James Mill (*Analysis of the Mind*, vol. i. pp. 171, 172) says that consciousness and belief are the same, and that great error has arisen from calling 'consciousness a feeling distinct from all other feelings.' According to Locke (*Essay concerning Human Understanding*, book ii. chap. i., Works, vol. i. p. 89), 'consciousness is the perception of what passes in a man's own mind.' Brown (*Philosophy of the Mind*, pp. 67, 68) denies that consciousness is a faculty: and Sir W. Hamilton complains of 'Reid's degradation of consciousness into a special faculty.' *Notes to Reid's Works*, pp. 223, 297, 373. M. Cousin (*Hist. de la Philosophie*, II. Série, vol. i. p. 131) pronounces consciousness to be 'phénomène complexe;' and at p. 94, 'la *condition* nécessaire de l'intelligence c'est la conscience:' while a still later writer (*Jobert's New System of Philosophy*, vol. i. p. 25) declares that 'we have the consciousness of our consciousness – this is certain.' The statement in Alciphron, Dialogue vii. (*Berkeley's Works*, vol. i. pp. 505, 506) is equally unsatisfactory: and what still further perplexes the question is the existence of what is now recognised as 'double consciousness.' See on this extraordinary phenomenon *Elliotson's Physiology*, pp. 367–369, 1165; *Mayo's Physiology*, pp. 195, 196; *Prichard's Treatise on Insanity*, pp. 450, 451; *Carpenter's Human Physiology*, p. 379.

[13] This requires explanation. Consciousness is infallible as to the *fact* of its testimony; but fallible as to the *truth*. That we are conscious of certain phenomena, is a proof that those phenomena exist in the mind, or are presented to it; but to say that this demonstrates the truth of the phenomena is to go a step further, and not only offer a testimony, but also pass a judgment. The moment we do this, we introduce the element of fallibility; because consciousness and judgment put together cannot be always right, inasmuch as judgment is often wrong.The late Blanco White, a thinker of considerable subtlety, says: 'The important distinction between *libertas a necessitate* and *libertas a coactione*, is seldom attended to. Nothing whatever can *force* my will: every man is more or less conscious of that fact: but at the same time we are, or may be, equally conscious that we are never decided without a motive.' *Life of B. White*, by Himself, 1845, vol. iii. p. 90. But how can a man be conscious 'that nothing whatever *can* force his will'? This is not consciousness, but judgment: it is a judgment of what may be, not a consciousness of what is. If there is any meaning in the word 'consciousness,' it must refer solely to the present, and can never include future contingencies as to what *may* be or *can* be.

[14] As Herder says, 'Was diese Nation ihrem Gedankenkreise unentbehrlich hält, daran hat jene nie gedacht oder hält es gar für schädlich.' *Ideen zur Gesch. der Menschheit*, vol. ii. p. 130.

be attempted to refute this argument by saying that such consciousness is apparent and not real, then I ask, What is it that judges between the consciousness which is genuine and that which is spurious?[15] If this boasted faculty deceives us in some things, what security have we that it will not deceive us in others? If there is no security, the faculty is not trustworthy. If there is a security, then, whatever it may be, its existence shows the necessity for some authority to which consciousness is subordinate, and thus does away with that doctrine of the supremacy of consciousness, on which the advocates of free will are compelled to construct the whole of their theory. Indeed, the uncertainty as to the existence of consciousness as an independent faculty, and the manner in which that faculty, if it exists, has contradicted its own suggestions, are two of the many reasons which have long since convinced me that metaphysics will never be raised to a science by the ordinary method of observing individual minds; but that its study can only be successfully prosecuted by the deductive application of laws which must be discovered historically, that is to say, which must be evolved by an examination of the whole of those vast phenomena which the long course of human affairs presents to our view.

Fortunately, however, for the object of this work, the believer in the possibility of a science of history is not called upon to hold either the doctrine of predestined events, or that of freedom of the will;[16] and the only positions which, in this stage of the inquiry, I shall expect him to concede are the following: That when we perform an action, we perform it in consequence of some motive or motives; that those motives are the results of some antecedents; and that, therefore, if we were acquainted with the whole of the antecedents, and with all the laws of their movements, we could with unerring certainty predict the whole of their immediate results. This, unless I am greatly mistaken, is the view which must be held by every man whose mind is unbiased by system, and who forms his opinions according to the evidence actually before him.[17] If, for example, I am intimately acquainted with the character of any person, I can frequently tell how he will act under some given circumstances. Should I fail in this prediction, I must ascribe my error not to the arbitrary and capricious freedom of his will, nor to any supernatural pre-arrangement, for of neither of these things have we the slightest proof; but I must be content to suppose either that I had been misinformed as to some of the circumstances

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[15] Plato was struck by the extreme difficulty of finding a standard in the human mind whereby we may test the truth or falsehood of spectral phenomena and dreams. And the only conclusion to which this consummate thinker could arrive, was that whatever appears true to the individual mind is true for him: which, however, is an evasion of the problem, not a solution of it. See the Theætetus, where Plato, as usual, puts his own speculations into the mouth of Socrates. He opens the question at the beginning of sec. 39 (*Platonis Opera*, vol. iii. p. 426, edit. Bekker, Lond. 1826), Μὴ τοίνυν ἀπολίπωμεν ὅσον ἐλλεῖπον αὐτοῦ. λείπεται δὲ ἐνυπνίων τε πέρι καὶ νόσων, τῶν τε ἄλλων καὶ μανίας, &c. These are the supposed sources of error; but Socrates, after discussing them, and entangling Theætetus in a maze, sums up at the end of sec. 45, p. 434, ἀληθὴς ἄρα ἐμοὶ ἡ ἐμὴ αἴσθησις. See further, p. 515, on the formation of erroneous judgments; and respecting the assertions made by many of the Greeks that πᾶσα φαντασία ἀληθὴς and πᾶσα δύξα ἀληθὴς, compare *Cudworth*, vol. iii. p. 379, vol. iv. p. 118. For physiological considerations concerning the preservation of consciousness in dreams and in insanity, see *Broussais*, *Examen des Doctrines Médicales*, vol. i. p. 406; his *Cours de Phrénologie*, p. 49; *Esquirol*, *Maladies Mentales*, vol. i. p. 97, vol. ii. p. 790; *Simon's Pathology*, p. 204; *Holland's Medical Notes*, p. 434; *Henle*, *Anatomie Générale*, vol. ii. p. 287; *Burdach*, *Traité de Physiologie*, vol. v. p. 223. See, too, the passages in Tennemann which connect this difficulty with the theory of representation (*Geschichte der Philosophie*, vol. i. p. 357, vol. ii. pp. 119, 159, vol. iii. p. 406, vol. iv. p. 418); and the attempt of Berkeley (*Works*, vol. i. pp. 93, 101, 176) to turn it into a defence of his own system, on the ground that our belief respecting the external world may be as false when we are awake as when we dream. The solution offered by the Stoics is merely a verbal and unproved distinction: διαφέρει δὲ φαντασία καὶ φάντασμα. φάντασμα μὲν γάρ ἐστι δόκησις διανοίας οἵα γίνται κατὰ τοὺς ὕπνους· φαντασία δέ ἐστι τύπωσις ἐν ψυχῇ τουτέστιν ἀλλοίωσις, ὡς ὁ Χρύσιππος ἐν τῇ δνωδεκάτη περὶ ψυῆς ὑφίσταται *Diog. Laert. de Vitis Philos.* lib. vii. segm. 50, vol. i. p. 395.

[16] Meaning by free will, a cause of action residing in the mind, and exerting itself independently of motives. If any one says that we have this power of acting without motives, but that in the practical exercise of the power we are always guided by motives either conscious or unconscious – if any one says this, he asserts a barren proposition, which does not interfere with my views, and which may or may not be true, but which most assuredly no one has ever yet succeeded in proving.

[17] That is, according to the phenomenal evidence presented to the understanding, and estimated by the ordinary logic with which the understanding is conversant. But Kant has made a most remarkable attempt to avoid the practical consequences of this, by asserting that freedom, being an idea produced by the reason, must be referred to transcendental laws of the reason; that is, to laws which are removed from the domain of experience, and cannot be verified by observation. In regard, however, to the scientific conceptions of the understanding (as distinguished from the Reason) he fully admits the existence of a Necessity destructive of Liberty. In Note A, at the end of this chapter, I shall put together the most important passages in which Kant unfolds this view.

in which he was placed, or else that I had not sufficiently studied the ordinary operations of his mind. If, however, I were capable of correct reasoning, and if, at the same time, I had a complete knowledge both of his disposition and of all the events by which he was surrounded, I should be able to foresee the line of conduct which, in consequence of those events, he would adopt.[18]

Rejecting, then, the metaphysical dogma of free will, and the theological dogma of predestined events,[19] we are driven to the conclusion that the actions of men, being determined solely by their antecedents, must have a character of uniformity, that is to say, must, under precisely the same circumstances, always issue in precisely the same results. And as all antecedents are either in the mind or out of it, we clearly see that all the variations in the results, in other words, all the changes of which history is full, all the vicissitudes of the human race, their progress or their decay, their happiness or their misery, must be the fruit of a double action; an action of external phenomena upon the mind, and another action of the mind upon the phenomena.

These are the materials out of which a philosophic history can alone be constructed. On the one hand, we have the human mind obeying the laws of its own existence, and, when uncontrolled by external agents, developing itself according to the conditions of its organization. On the other hand, we have what is called Nature, obeying likewise its laws; but incessantly coming into contact with the minds of men, exciting their passions, stimulating their intellect, and therefore giving to their actions a direction which they would not have taken without such disturbance. Thus we have man modifying nature, and nature modifying man; while out of this reciprocal modification all events must necessarily spring.

The problem immediately before us, is to ascertain the method of discovering the laws of this double modification: and this, as we shall presently see, leads us into a preliminary inquiry as to which of the two modifications is the more important; that is to say, whether the thoughts and desires of men are more influenced by physical phenomena, or whether the physical phenomena are more influenced by them. For it is evident that whichever class is the more active, should if possible be studied before the other; and this, partly because its results will be more prominent, and therefore more easy to observe; and partly because by first generalizing the laws of the greater power we shall leave a smaller residue of unexplained facts than if we had begun by generalizing the laws of the lesser power. But, before entering into this examination, it will be convenient to state some of the most decisive proofs we now possess of the regularity with which mental phenomena succeed each other. By this means the preceding views will be considerably strengthened; and we shall, at the same time, be able to see what those resources are which have been already employed in elucidating this great subject.

That the results actually effected are extremely valuable is evident, not only from the wide surface which the generalizations cover, but also from the extraordinary precautions with which they have been made. For while most moral inquiries have depended on some theological or metaphysical hypothesis, the investigations to which I allude are exclusively inductive; they are based on collections

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[18] This is, of course, an hypothetical case, merely given as an illustration. We never can know the whole of any man's antecedents, or even the whole of our own; but it is certain that the nearer we approach to a complete knowledge of the antecedent, the more likely we shall be to predict the consequent.

[19] The doctrine of providential interference is bound up with that of predestination, because the Deity, foreseeing all things, must have foreseen His own intention to interfere. To deny this foresight, is to limit the omniscience of God. Those, therefore, who hold that, in particular cases, a special providence interrupts the ordinary course of events, must also hold that in each case the interruption had been predestined; otherwise they impeach one of the Divine attributes. For, as Thomas Aquinas puts it (*Neander's History of the Church*, vol. viii. p. 176), 'knowledge, as knowledge, does not imply, indeed, causality; but in so far as it is a knowledge belonging to the artist who forms, it stands in the relation of causality to that which is produced by his art.'The same argument is stated by Alciphron, though not quite so conclusively; *Dialogue* vii. sec. 20 in *Berkeley's Works*, vol. i. p. 515: and as to the impossibility of Omniscience having new knowledge or an afterthought, see *Hitchcock's Religion of Geology*, 1851, pp. 267, 328; an ingenious work, but one which leaves all the real difficulties untouched. Compare *Ritter's Hist. of Ancient Philos.* vol. iv. pp. 326, 327, with *Tennemann, Gesch. der Philos.* vol. vi. pp. 151, 342–345, vol. ix. pp. 81–94, vol. xi. p. 178; and in particular, the question raised (vol. viii. p. 242), 'Ob das Vorherwissen Gottes die Ursache der künftigen Dinge sey, oder nicht.' It was to meet all this, that some asserted the eternity of matter, and others the existence of two original principles, one good and one evil. *Beausobre*, *Histoire de Manichée*, vol. ii. pp. 145, 146, 252, 336.

of almost innumerable facts, extending over many countries, thrown into the clearest of all forms, the form of arithmetical tables; and finally, they have been put together by men who, being for the most part mere government officials,[20] had no particular theory to maintain, and no interest in distorting the truth of the reports they were directed to make.

The most comprehensive inferences respecting the actions of men, which are admitted by all parties as incontestable truths, are derived from this or from analogous sources; they rest on statistical evidence, and are expressed in mathematical language. And whoever is aware of how much has been discovered by this single method, must not only recognize the uniformity with which mental phenomena succeed each other, but must, I think, feel sanguine that still more important discoveries will be made, so soon as there are brought into play those other powerful resources which even the present state of knowledge will abundantly supply. Without, however, anticipating future inquiries, we are, for the moment, only concerned with those proofs of the existence of a uniformity in human affairs which statisticians have been the first to bring forward.

The actions of men are by an easy and obvious division separated into two classes, the virtuous and the vicious; and as these classes are correlative, and when put together compose the total of our moral conduct, it follows that whatever increases the one, will in a relative point of view diminish the other; so that if we can in any period detect a uniformity and a method in the vices of a people, there must be a corresponding regularity in their virtues; or if we could prove a regularity in their virtues, we should necessarily infer an equal regularity in their vices; the two sets of actions being, according to the terms of the division, merely supplementary to each other.[21] Or, to express this proposition in another way, it is evident that if it can be demonstrated that the bad actions of men vary in obedience to the changes in the surrounding society, we shall be obliged to infer that their good actions, which are, as it were, the residue of their bad ones, vary in the same manner; and we shall be forced to the further conclusion, that such variations are the result of large and general causes, which, working upon the aggregate of society, must produce certain consequences, without regard to the volition of those particular men of whom the society is composed.

Such is the regularity we expect to find, if the actions of men are governed by the state of the society in which they occur; while, on the other hand, if we can find no such regularity, we may believe that their actions depend on some capricious and personal principle peculiar to each man, as free will or the like. It becomes, therefore, in the highest degree important to ascertain whether or not there exists a regularity in the entire moral conduct of a given society; and this is precisely one of those questions for the decision of which statistics supply us with materials of immense value.

For the main object of legislation being to protect the innocent against the guilty, it naturally followed that European governments, so soon as they became aware of the importance of statistics, should begin to collect evidence respecting the crimes they were expected to punish. This evidence has gone on accumulating, until it now forms of itself a large body of literature, containing, with the commentaries connected with it, an immense array of facts, so carefully compiled, and so well and clearly digested, that more may be learned from it respecting the moral nature of Man than can be gathered from all the accumulated experience of preceding ages.[22] But as it will be impossible in this

[20] *Dufau*, *Traité de Statistique*, pp. 75, 148.

[21] Some moralists have also established a third class of actions, which they call indifferent, as belonging neither to virtue nor to vice; and hence there arose the famous doctrine of probability, set up by several eminent Romish casuists, and hotly attacked by Pascal. But this, if we put aside its worst feature, namely its practical bearings, is merely a question of definition; inasmuch as every indifferent act must lean on the side either of evil or of good, and may therefore be referred to the category to which it inclines; and certainly every increase of vice diminishes virtue relatively, though not always absolutely. Among the Greek philosophers there was a schism on this point: Ἀρέσκει δὲ αὐτοὶς (i.e. the Stoics) μηδὲν μέσον εἶναι ἀρετῆς και κακίας· τῶν περιπατητκῶν μεταξὺ ἀρετῆς καὶ κακίας εἶναι λεγόντων τὴν προκοπήν. *Diog. Laert. de Vitis Philosophorum*, lib. vii. segm. 127, vol. i. p. 445.

[22] I say this advisedly: and whoever has examined these subjects must be aware of the way in which writers on morals repeat the commonplace and hackneyed notions of their predecessors; so that a man, after reading everything that has been written on moral conduct and moral philosophy, will find himself nearly as much in the dark as when his studies first began. The most accurate

Introduction to give anything like a complete statement of those inferences which, in the actual state of statistics, we are authorized to draw, I shall content myself with examining two or three of the most important, and pointing out the connexion between them.

Of all offences, it might well be supposed that the crime of murder is one of the most arbitrary and irregular. For when we consider that this, though generally the crowning act of a long career of vice, is often the immediate result of what seems a sudden impulse; that when premeditated, its committal, even with the least chance of impunity, requires a rare combination of favourable circumstances for which the criminal will frequently wait; that he has thus to bide his time, and look for opportunities he cannot control; that when the time has come his heart may fail him; that the question whether or not he shall commit the crime may depend on a balance of conflicting motives, such as fear of the law, a dread of the penalties held out by religion, the prickings of his own conscience, the apprehension of future remorse, the love of gain, jealousy, revenge, desperation; – when we put all these things together, there arises such a complication of causes, that we might reasonably despair of detecting any order or method in the result of those subtle and shifting agencies by which murder is either caused or prevented. But now, how stands the fact? The fact is, that murder is committed with as much regularity, and bears as uniform a relation to certain known circumstances, as do the movements of the tides, and the rotations of the seasons. M. Quetelet, who has spent his life in collecting and methodizing the statistics of different countries, states, as the result of his laborious researches, that 'in everything which concerns crime, the same numbers re-occur with a constancy which cannot be mistaken; and that this is the case even with those crimes which seem quite independent of human foresight, such, for instance, as murders, which are generally committed after quarrels arising from circumstances apparently casual. Nevertheless, we know from experience that every year there not only take place nearly the same number of murders, but that even the instruments by which they are committed are employed in the same proportion.'[23] This was the language used in 1835 by confessedly the first statistician in Europe, and every subsequent investigation has confirmed its accuracy. For later inquiries have ascertained the extraordinary fact that the uniform reproduction of crime is more clearly marked, and more capable of being predicted, than are the physical laws connected with the disease and destruction of our bodies. Thus, for instance, the number of persons accused of crime in France between 1826 and 1844 was, by a singular coincidence, about equal to the male deaths which took place in Paris during the same period, the difference being that the fluctuations in the amount of crime were actually smaller than the fluctuations in the mortality; while a similar regularity was observed in each separate offence, all of which obeyed the same law of uniform and periodical repetition.[24]

This, indeed, will appear strange to those who believe that human actions depend more upon the peculiarities of each individual than on the general state of society. But another circumstance

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investigators of the human mind have hitherto been the poets, particularly Homer and Shakespeare; but these extraordinary observers mainly occupied themselves with the concrete phenomena of life; and if they analyzed, as they probably did, they have concealed the steps of the process, so that now we can only verify their conclusions empirically. The great advance made by the statisticians consists in applying to these inquiries the doctrine of averages, which no one thought of doing before the eighteenth century.

[23] 'Dans tout ce qui se rapporte aux crimes, les mêmes nombres se reproduisent avec une constance telle, qu'il serait impossible de la méconnaître, même pour ceux des crimes qui sembleraient devoir échapper le plus à toute prévision humaine, tels que les meurtres, puisqu'ils se commettent, en général, à la suite de rixes qui naissent sans motifs, et dans les circonstances, en apparence, les plus fortuites. Cependant l'expérience prouve que non-seulement les meurtres sont annuellement à peu près en même nombre, mais encore que les instrumens qui servent à les commettre sont employés dans les mêmes proportions.' *Quetelet sur l'Homme*, Paris, 1835, vol. i. p. 7; see also vol. ii. pp. 164, 247.

[24] 'Thus in twenty years' observations, the number of persons accused of various crimes in France, and registered under their respective ages, scarcely varies at any age from year to year, comparing the proportion per cent. under each age with the totals. The number of persons accused in all France, in the years 1826 to 1844, was about equal to the deaths of males registered in Paris; but singularly enough, the former results are more regular than the latter, notwithstanding the accidental causes which might affect them; – notwithstanding even a revolution in Paris, which convulsed society and brought in a new dynasty.' *Brown on the Uniform Action of the Human Will*, in *The Assurance Magazine*, no. viii., July 1852, pp. 349, 350. That the variations in crime are less than those of mortality, is also noticed in *Statistique Morale*, pp. 18, 34, in *Mémoires de l'Académie de Belgique*, vol. xxi., Bruxelles, 1848, 4to.

remains behind still more striking. Among public and registered crimes there is none which seems so completely dependent on the individual as suicide. Attempts to murder or to rob may be, and constantly are, successfully resisted; baffled sometimes by the party attacked, sometimes by the officers of justice. But an attempt to commit suicide is much less liable to interruption. The man who is determined to kill himself is not prevented at the last moment by the struggles of an enemy; and, as he can easily guard against the interference of the civil power,[25] his act becomes as it were isolated; it is cut off from foreign disturbances, and seems more clearly the product of his own volition than any other offence could possibly be. We may also add that, unlike crimes in general, it is rarely caused by the instigation of confederates; so that men, not being goaded into it by their companions, are uninfluenced by one great class of external associations which might hamper what is termed the freedom of their will. It may, therefore, very naturally be thought impracticable to refer suicide to general principles, or to detect anything like regularity in an offence which is so eccentric, so solitary, so impossible to control by legislation, and which the most vigilant police can do nothing to diminish. There is also another obstacle that impedes our view: this is, that even the best evidence respecting suicide must always be very imperfect. In cases of drowning, for example, deaths are liable to be returned as suicides which are accidental; while, on the other hand, some are called accidental which are voluntary.[26] Thus it is, that self-murder seems to be not only capricious and uncontrollable, but also very obscure in regard to proof; so that on all these grounds it might be reasonable to despair of ever tracing it to those general causes by which it is produced.

These being the peculiarities of this singular crime, it is surely an astonishing fact, that all the evidence we possess respecting it points to one great conclusion, and can leave no doubt on our minds that suicide is merely the product of the general condition of society, and that the individual felon only carries into effect what is a necessary consequence of preceding circumstances.[27] In a given state of society, a certain number of persons must put an end to their own life. This is the general law; and the special question as to who shall commit the crime depends, of course, upon special laws; which, however, in their total action, must obey the large social law to which they are all subordinate. And the power of the larger law is so irresistible, that neither the love of life nor the fear of another world can avail anything towards even checking its operation. The causes of this remarkable regularity I shall hereafter examine; but the existence of the regularity is familiar to whoever is conversant with moral statistics. In the different countries for which we have returns, we find year by year the same proportion of persons putting an end to their own existence; so that, after making allowance for the impossibility of collecting complete evidence, we are able to predict, within a very small limit of error, the number of voluntary deaths for each ensuing period; supposing, of course, that the social circumstances do not undergo any marked change. Even in London, notwithstanding the vicissitudes

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[25] The folly of lawgivers thinking that by their enactments they can diminish suicide, is exposed by M. C. Comte in his *Traité de Législation*, vol. i. p. 486. See also some good remarks by Jefferson, in his observations on criminal law in *Appendix to Jefferson's Memoirs, by Randolph*, vol. i. pp. 126, 127. Heber (*Journey through India*, vol. i. pp. 389, 390) found that the English Government had vainly attempted to check the suicides frequently committed at Benares by drowning: and in our country the interference of legislators is met by the perjury of jurors, since, as Bentham says, English juries do not hesitate to violate their oaths by declaring the suicide to be *non compos*. *Principles of Penal Law*, in *Bentham's Works*, edit. Bowring, 1843, vol. i. pp. 479, 480. In regard to the determination of the individual, and the impossibility of baffling his intention, there are cases recorded of persons who, being deprived of the ordinary means of destruction, put an end to life by holding their breath; while others effected their purpose by turning back the tongue so as to exclude air from the larynx. *Elliotson's Human Physiology*, pp. 491, 492.

[26] This also applies to other cases besides those of drowning. See *Taylor's Medical Jurisprudence*, 1846, pp. 587, 597; and on the difficulty of always distinguishing a real suicide from an apparent one, see *Esquirol*, *Maladies Mentales*, vol. i. p. 575. From a third to a half of all suicides are by drowning. Compare *Dufau*, *Traité de Statistique*, p. 304; *Winslow's Anatomy of Suicide*, 1840, p. 277; *Quetelet*, *Statistique Morale*, p. 66. But among these, many are no doubt involuntary; and it is certain that popular opinion grossly exaggerates the length of time during which it is possible to remain under water. *Brodie's Surgery*, 1846, pp. 89–92.

[27] 'Tout semble dépendre de causes déterminées. Ainsi, nous trouvons annuellement à peu près le même nombre de suicides, non-seulement en général, mais encore en faisant la distinction des sexes, celle des âges, ou même celle des instruments employés pour se détruire. Une année reproduit si fidèlement les chiffres de l'année qui a précédé, qu'on peut prévoir ce qui doit arriver dans l'année qui va suivre.' *Quetelet*, *Statistique Morale*, 1848, p. 35; see also p. 40.

incidental to the largest and most luxurious capital in the world, we find a regularity greater than could be expected by the most sanguine believer in social laws; since political excitement, mercantile excitement, and the misery produced by the dearness of food, are all causes of suicide, and are all constantly varying.[28] Nevertheless, in this vast metropolis, about 240 persons every year make away with themselves; the annual suicides oscillating, from the pressure of temporary causes, between 266, the highest, and 213, the lowest. In 1846, which was the great year of excitement caused by the railway panic, the suicides in London were 266; in 1847 began a slight improvement, and they fell to 256; in 1848 they were 247; in 1849 they were 213; and in 1850 they were 229.[29]

Such is some, and only some, of the evidence we now possess respecting the regularity with which, in the same state of society, the same crimes are necessarily reproduced. To appreciate the full force of this evidence, we must remember that it is not an arbitrary selection of particular facts, but that it is generalized from an exhaustive statement of criminal statistics, consisting of many millions of observations, extending over countries in different grades of civilization, with different laws, different opinions, different morals, different habits. If we add to this, that these statistics have been collected by persons specially employed for that purpose, with every means of arriving at the truth, and with no interest to deceive, it surely must be admitted that the existence of crime according to a fixed and uniform scheme, is a fact more clearly attested than any other in the moral history of man. We have here parallel chains of evidence formed with extreme care, under the most different circumstances, and all pointing in the same direction; all of them forcing us to the conclusion, that the offences of men are the result not so much of the vices of the individual offender as of the state of society into which that individual is thrown.[30] This is an inference resting on broad and tangible proofs accessible to all the world; and as such cannot be overturned, or even impeached, by any of those hypotheses with which metaphysicians and theologians have hitherto perplexed the study of past events.

Those readers who are acquainted with the manner in which in the physical world the operations of the laws of nature are constantly disturbed, will expect to find in the moral world disturbances equally active. Such aberrations proceed, in both instances, from minor laws, which at particular points meet the larger laws, and thus alter their normal action. Of this, the science of mechanics affords a good example in the instance of that beautiful theory called the parallelogram of forces; according to which the forces are to each other in the same proportion as is the diagonal of their respective parallelograms.[31] This is a law pregnant with great results; it is connected with those important mechanical resources, the composition and resolution of forces; and no one acquainted with the evidence on which it stands, ever thought of questioning its truth. But the moment we avail ourselves of it for practical purposes, we find that in its action it is warped by other laws, such as those concerning the friction of air, and the different density of the bodies on which we operate, arising from their chemical composition, or, as some suppose, from their atomic arrangement. Perturbations being thus let in, the pure and simple action of the mechanical law disappears. Still, and although the results of the law are incessantly disturbed, the law itself remains intact.[32] Just in the same way,

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[28] On the causes of suicides, see *Burdach's Traité de Physiologie*, vol. v. pp. 476–478; and *Forry's Climate and its Endemic Influences*, p. 329. The latest researches of M. Casper confirm the statement of earlier statisticians, that suicide is more frequent among Protestants than among Catholics. *Casper*, *Denkwürdigkeiten zur medicinischen Statistik*, Berlin, 1846, p. 139.

[29] See the tables in the *Assurance Magazine*, no. iv. p. 309, no. v. p. 34, no. viii. p. 350. These are the only complete consecutive returns of London suicides yet published; those issued by the police being imperfect. *Assurance Magazine*, no. v. p. 53. From inquiries made for me at the General Register Office, in January 1856, I learnt that there was an intention of completing the yearly returns, but I do not know if this has since been done.

[30] 'L'expérience démontre en effet, avec toute l'évidence possible, cette opinion, qui pourra sembler paradoxale au premier abord, que *c'est la société qui prépare le crime, et que le coupable n'est que l'instrument qui l'exécute*.' *Quetelet sur l'Homme*, vol. ii. p. 325.

[31] The diagonal always giving the resultant when each side represents a force; and if we look on the resultant as a compound force, a comparison of diagonals becomes a comparison of compounds.

[32] A law of nature being merely a generalization of relations, and having no existence except in the mind, is essentially intangible; and therefore, however small the law may be, it can never admit of exceptions, though its operation may admit of innumerable exceptions. Hence, as Dugald Stewart (*Philosophy of the Mind*, vol. ii. p. 211) rightly says, we can only refer to the laws of nature 'by

the great social law, that the moral actions of men are the product not of their volition, but of their antecedents, is itself liable to disturbances which trouble its operation without affecting its truth. And this is quite sufficient to explain those slight variations which we find from year to year in the total amount of crime produced by the same country. Indeed, looking at the fact that the moral world is far more abundant in materials than the physical world, the only ground for astonishment is that these variations should not be greater; and from the circumstance that the discrepancies are so trifling, we may form some idea of the prodigious energy of those vast social laws, which, though constantly interrupted, seem to triumph over every obstacle, and which, when examined by the aid of large numbers, scarcely undergo any sensible perturbation.[33]

Nor is it merely the crimes of men which are marked by this uniformity of sequence. Even the number of marriages annually contracted, is determined, not by the temper and wishes of individuals, but by large general facts, over which individuals can exercise no authority. It is now known that marriages bear a fixed and definite relation to the price of corn;[34] and in England the experience of a century has proved that, instead of having any connexion with personal feelings, they are simply regulated by the average earnings of the great mass of the people:[35] so that this immense social and religious institution is not only swayed, but is completely controlled, by the price of food and by the rate of wages. In other cases, uniformity has been detected, though the causes of the uniformity are still unknown. Thus, to give a curious instance, we are now able to prove that even the aberrations of memory are marked by this general character of necessary and invariable order. The post-offices of London and of Paris have latterly published returns of the number of letters which the writers, through forgetfulness, omitted to direct; and, making allowance for the difference of circumstances, the returns are year after year copies of each other. Year after year the same proportion of letter-writers forget this simple act; so that for each successive period we can actually foretell the number of persons whose memory will fail them in regard to this trifling and, as it might appear, accidental occurrence.[36]

To those who have a steady conception of the regularity of events, and have firmly seized the great truth that the actions of men, being guided by their antecedents, are in reality never inconsistent, but, however capricious they may appear, only form part of one vast scheme of universal order, of which we in the present state of knowledge can barely see the outline – to those who understand this,

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a sort of figure or metaphor.' This is constantly lost sight of even by authors of repute; some of whom speak of laws as if they were causes, and therefore liable to interruption by larger causes; while other writers pronounce them to be 'delegated agencies' from the Deity. Compare *Prout's Bridgewater Treatise*, pp. 318, 435, 495; *Sadler's Law of Population*, vol. ii. p. 67; *Burdach's Physiologie*, vol. i. p. 160. Mr. Paget, in his able work, *Lectures on Pathology*, vol. i. p. 481, vol. ii. p. 542, with much greater accuracy calls such cases 'apparent exceptions' to laws; but it would be better to say, 'exceptions to the operations of laws.' The context clearly proves that Mr. Paget distinctly apprehends the difference; but a slight alteration of this kind would prevent confusion in the minds of ordinary readers.

[33] Mr. Rawson, in his *Inquiry into the Statistics of Crime in England and Wales* (published in the *Journal of the Statistical Society*, vol. ii. pp. 316–344), says, p. 327, 'No greater proof can be given of the possibility of arriving at certain constants with regard to crime, than the fact which appears in the following table, that the greatest variation which has taken place during the last three years, in the proportion of any class of criminals at the same period of life, has not exceeded a half per cent.' See also *Report of British Association for 1839, Transac. of Sec.*, p. 118. Indeed, all writers who have examined the evidence are forced to admit this regularity, however they may wish to explain it. M. Dufau (*Traité de Statistique*, p. 144) says, 'Les faits de l'ordre moral sont, aussi bien que ceux de l'ordre naturel, le produit de causes constantes et régulières,' &c.; and at p. 367, 'C'est ainsi que le monde moral se présente à nous, de ce point de vue, comme offrant, de même que le monde physique, un ensemble continu d'effets dus à des causes constantes et régulières, dont il appartient surtout à la statistique de constater l'action.' See to the same effect *Moreau-Christophe des Prisons en France*, Paris, 1838, pp. 53, 189.

[34] 'It is curious to observe how intimate a relation exists between the price of food and the number of marriages.' … 'The relation that subsists between the price of food and the number of marriages is not confined to our own country; and it is not improbable that, had we the means of ascertaining the facts, we should see the like result in every civilized community. We possess the necessary returns from France; and these fully bear out the view that has been given.' *Porter's Progress of the Nation*, vol. ii. pp. 244, 245, London, 1838.

[35] 'The marriage returns of 1850 and 1851 exhibit the excess which since 1750 has been invariably observed when the substantial earnings of the people are above the average.' *Journal of Statistical Society*, vol. xv. p. 185.

[36] See *Somerville's Physical Geography*, vol. ii. pp. 409–411, which, says this able writer, proves that 'forgetfulness as well as free will is under constant laws.' But this is using the word 'free will' in a sense different from that commonly employed.

which is at once the key and the basis of history, the facts just adduced, so far from being strange, will be precisely what would have been expected and ought long since to have been known. Indeed, the progress of inquiry is becoming so rapid and so earnest, that I entertain little doubt that before another century has elapsed, the chain of evidence will be complete, and it will be as rare to find an historian who denies the undeviating regularity of the moral world, as it now is to find a philosopher who denies the regularity of the material world.

It will be observed, that the preceding proofs of our actions being regulated by law, have been derived from statistics; a branch of knowledge which, though still in its infancy,[37] has already thrown more light on the study of human nature than all the sciences put together. But although the statisticians have been the first to investigate this great subject by treating it according to those methods of reasoning which in other fields have been found successful; and although they have, by the application of numbers, brought to bear upon it a very powerful engine for eliciting truth – we must not, on that account, suppose that there are no other resources remaining by which it may likewise be cultivated: nor should we infer that because the physical sciences have not yet been applied to history, they are therefore inapplicable to it. Indeed, when we consider the incessant contact between man and the external world, it is certain that there must be an intimate connexion between human actions and physical laws; so that if physical science had not hitherto been brought to bear upon history, the reason is, either that historians have not perceived the connexion, or else that, having perceived it, they have been destitute of the knowledge by which its workings can be traced. Hence there has arisen an unnatural separation of the two great departments of inquiry, the study of the internal and that of the external: and although, in the present state of European literature, there are some unmistakable symptoms of a desire to break down this artificial barrier, still it must be admitted that as yet nothing has been actually accomplished towards effecting so great an end. The moralists, the theologians, and the metaphysicians, continue to prosecute their studies without much respect for what they deem the inferior labours of scientific men; whose inquiries, indeed, they frequently attack, as dangerous to the interests of religion, and as inspiring us with an undue confidence in the resources of the human understanding. On the other hand, the cultivators of physical science, conscious that they are an advancing body, are naturally proud of their own success; and, contrasting their discoveries with the more stationary position of their opponents, are led to despise pursuits the barrenness of which has now become notorious.

It is the business of the historian to mediate between these two parties, and reconcile their hostile pretensions by showing the point at which their respective studies ought to coalesce. To settle the terms of this coalition, will be to fix the basis of all history. For since history deals with the actions of men, and since their actions are merely the product of a collision between internal and external phenomena, it becomes necessary to examine the relative importance of those phenomena; to inquire into the extent to which their laws are known; and to ascertain the resources for future discovery possessed by these two great classes, the students of the mind and the students of nature. This task I shall endeavour to accomplish in the next two chapters: and if I do so with anything approaching to success, the present work will at least have the merit of contributing something towards filling up

[37] Achenwall, in the middle of the eighteenth century, is usually considered to be the first systematic writer on statistics, and is said to have given them their present name. See *Lewis*, *Methods of Observation and Reasoning in Politics*, 1852, vol. i. p. 72; *Biographie Universelle*, vol. i. p. 140; *Dufau*, *Traité de Statistique*, pp. 9, 10. Even so late as 1800, the Bishop of Llandaff wrote to Sir John Sinclair, 'I must think the kingdom is highly indebted to you for bringing forward a species of knowledge (statistics) wholly new in this country, though not new in other parts of Europe.' *Sinclair's Correspondence*, vol. i. p. 230. Sinclair, notwithstanding his industry, was a man of slender powers, and did not at all understand the real importance of statistics, of which, indeed, he took a mere practical view. Since then statistics have been applied extensively to medicine; and still more recently, and on a smaller scale, to philology and to jurisprudence. Compare *Bouillaud*, *Philosophie Médicale*, pp. 96, 186; *Renouard*, *Hist. de la Médecine*, vol. ii. pp. 474, 475; *Esquirol*, *Maladies Mentales*, vol. ii. pp. 665–667; *Holland's Medical Notes*, pp. 5, 472; *Vogel's Pathological Anatomy*, pp. 15–17; *Simon's Pathology*, p. 180; *Phillips on Scrofula*, pp. 70, 118, &c.; *Prichard's Physical Hist. of Mankind*, vol. iv. p. 414; *Eschbach*, *Etude du Droit*, pp. 392–394.

that wide and dreary chasm, which, to the hindrance of our knowledge, separates subjects that are intimately related, and should never be disunited.

Note A

'Der Begriff der Freiheit ist ein reiner Vernunftbegriff, der eben darum für die theoretische Philosophie transcendent, d. i. ein solcher ist, dem kein angemessenes Beispiel in irgend einer möglichen Erfahrung gegeben werden kann, welcher also keinen Gegenstand einer uns möglichen theoretischen Erkenntniss ausmacht, und schlechterdings nicht für ein constitutives, sondern lediglich als regulatives, und zwar nur bloss negatives Princip der speculativen Vernunft gelten kann, im praktischen Gebrauche der selben aber seine Realität durch praktische Grundsätze beweist, die, als Gesetze, eine Causalität der reinen Vernunft, unabhängig von allen empirischen Bedingungen (dem Sinnlichen überhaupt), die Willkühr zu bestimmen, und einen reinen Willen in uns beweisen, in welchem die sittlichen Begriffe und Gesetze ihren Ursprung haben.' *Metaphysik der Sitten*, in *Kant's Werke*, vol. v. pp. 20, 21. 'Würden die Gegenstände der Sinnenwelt für Dinge an sich selbst genommen, und die oben angeführten Naturgesetze für Gesetze der Dinge an sich selbst, so wäre der Widerspruch' (*i. e.* between Liberty and Necessity) 'unvermeidlich. Ebenso, wenn das Subject der Freiheit gleich den übrigen Gegenständen als blose Erscheinung vorgestellt würde, so könnte ebensowohl der Widerspruch nicht vermieden werden; denn es würde ebendasselbe von einerlei Gegenständen in derselben Bedeutung zugleich bejaht und verneint werden. Ist aber Naturnothwendigkeit bloss auf Erscheinungen bezogen, und Freiheit bloss auf Dinge an sich selbst, so entspringt kein Widerspruch, wenn man gleich beide Arten von Causalität annimmt oder zugibt, so schwer oder unmöglich es auch sein möchte, die von der letzteren Art begreiflich zu machen.' … 'Natur also und Freiheit eben demselben Dinge, aber in verschiedener Beziehung, einmal als Erscheinung, das andre Mal als einem Dinge an sich selbst ohne Widerspruch beigelegt werden können.' … 'Nun kann ich ohne Widerspruch sagen: alle Handlungen vernünftiger Wesen, sofern sie Erscheinungen sind (in irgend einer Erfahrung angetroffen werden), stehen unter der Naturnothwendigkeit; eben dieselben Handlungen aber, bloss respective auf das vernünftige Subject und dessen Vermögen, nach blosser Vernunft zu handeln, sind frei.' *Prolegomena zu jeder künftigen Metaphysik*, in *Kant's Werke*, vol. iii. pp. 268–270. 'Denn ein Geschöpf zu sein und als Naturwesen bloss dem Willen seines Urhebers zu folgen; dennoch aber als freihandelndes Wesen (welches seinen vom äusseren Einfluss unabhängigen Willen hat, der dem ersteren vielfältig zuwider sein kann), der Zurechnung fähig zu sein, und seine eigene That doch auch zugleich als die Wirkung eines höheren Wesens anzusehen: ist eine Vereinbarung von Begriffen, die wir zwar in der Idee einer Welt, als des höchsten Gutes, zusammen denken müssen; die aber nur der einsehen kann, welcher bis zur Kenntniss der übersinnlichen (intelligiblen) Welt durchdringt und die Art einsieht, wie sie der Sinnenwelt zum Grunde liegt.' *Theodicee*, in *Kant's Werke*, vol. vi. p. 149. 'Nun wollen wir annehmen, die durch unsere Kritik nothwendig gemachte Unterscheidung der Dinge, als Gegenstände der Erfahrung, von eben denselben, als Dingen an sich selbst, wäre gar nicht gemacht, so müsste der Grundsatz der Causalität und mithin der Naturmechanismus in Bestimmung derselben durchaus von allen Dingen überhaupt als wirkenden Ursachen gelten. Von eben demselben Wesen also, z. B. der menschlichen Seele, würde ich nicht sagen können, ihr Wille sei frei, und er sei doch zugleich der Naturnothwendigkeit unterworfen, d. i. nicht frei, ohne in einen offenbaren Widerspruch zu gerathen; weil ich die Seele in beiden Sätzen in eben derselben Bedeutung, nämlich als Ding überhaupt (als Sache an sich selbst), genommen habe und, ohne vorhergehende Kritik, auch nicht anders nehmen konnte. Wenn aber die Kritik nicht geirrt hat, da sie das Object in zweierlei Bedeutung nehmen lehrt, nämlich als Erscheinung, oder als Ding an sich selbst; wenn die Deduction ihrer Verstandesbegriffe richtig ist, mithin auch der Grundsatz der Causalität nur auf Dinge im ersten Sinne genommen, nämlich so fern sie Gegenstände der Erfahrung sind, geht, eben dieselben aber nach der zweiten Bedeutung ihm

nicht unterworfen sind, so wird eben derselbe Wille in der Erscheinung (den sichtbaren Handlungen) als dem Naturgesetze nothwendig gemäss und so fern nicht frei, und doch andererseits, als einem Dinge an sich selbst angehörig, jenem nicht unterworfen, mithin als frei gedacht, ohne dass hiebei ein Widerspruch vorgeht.' *Kritik der reinen Vernunft*, in *Kant's Werke*, vol. ii. p. 24. 'Und hier zeigt die zwar gemeine, aber betrügliche Voraussetzung der absoluten Realität der Erscheinungen sogleich ihren nachtheiligen Einfluss, die Vernunft zu verwirren. Denn sind Erscheinungen Dinge an sich selbst, so ist Freiheit nicht zu retten. Alsdann ist Natur die vollständige und an sich hinreichend bestimmende Ursache jeder Begebenheit, und die Bedingung derselben ist jederzeit nur in der Reihe der Erscheinungen enthalten, die sammt ihrer Wirkung unter dem Naturgesetze nothwendig sind. Wenn dagegen Erscheinungen für Nichts mehr gelten, als sie in der That sind, nämlich nicht für Dinge an sich, sondern blosse Vorstellungen, die nach empirischen Gesetzen zusammenhängen, so müssen sie selbst noch Gründe haben, die nicht Erscheinungen sind.' … 'Hier habe ich nur die Anmerkung machen wollen, dass, da der durchgängige Zusammenhang aller Erscheinungen in einem Context der Natur ein unnachlässliches Gesetz ist, dieses alle Freiheit nothwendig umstürzen müsste, wenn man der Realität der Erscheinungen hartnäckig anhängen wollte. Daher auch diejenigen, welche hierin der gemeinen Meinung folgen, niemals dahin haben gelangen können, Natur und Freiheit mit einander zu vereinigen.' *Kritik*, in *Werke*, vol. ii. pp. 419, 420. Finally, at p. 433, 'Man muss wohl bemerken, dass wir hiedurch nicht die Wirklichkeit der Freiheit, als eines der Vermögen, welche die Ursache von den Erscheinungen unserer Sinnenwelt enthalten, haben darthun wollen. Denn ausser dass dieses gar keine transcendentale Betrachtung, die bloss mit Begriffen zu thun hat, gewesen sein würde, so könnte es auch nicht gelingen, indem wir aus der Erfahrung niemals auf Etwas, was gar nicht nach Erfahrungsgesetzen gedacht werden muss, schliessen können. Ferner haben wir auch gar nicht einmal die Möglichkeit der Freiheit beweisen wollen; denn dieses wäre auch nicht gelungen, weil wir überhaupt von keinem Realgrunde und keiner Causalität aus blossen Begriffen *a priori* die Möglichkeit erkennen können. Die Freiheit wird hier nur als transcendentale Idee behandelt, wodurch die Vernunft die Reihe der Bedingungen in der Erscheinung durch das sinnlich Unbedingte schlechthin aufzuheben denkt, dabei sich in eine Antinomie mit ihren eigenen Gesetzen, welche sie dem empirischen Gebrauche des Verstandes vorschreibt, verwickelt. Dass nun diese Antinomie auf einem blossen Scheine beruhe, und dass Natur der Causalität aus Freiheit wenigstens nicht widerstreite, das war das Einzige, was wir leisten konnten, und woran es uns auch einzig und allein gelegen war.'

These passages prove that Kant saw that the phenomenal reality of Free Will is an indefensible doctrine: and as the present work is an investigation of the laws of phenomena, his transcendental philosophy does not affect my conclusions. According to Kant's view (and with which I am inclined to agree) the ordinary metaphysical and theological treatment of this dark problem is purely empirical, and therefore has no value. The denial of the supremacy of consciousness follows as a natural consequence, and is the result of the Kantian philosophy, and not, as is often said, the base of it.

CHAPTER II
INFLUENCE EXERCISED BY PHYSICAL LAWS OVER THE ORGANIZATION OF SOCIETY AND OVER THE CHARACTER OF INDIVIDUALS

If we inquire what those physical agents are by which the human race is most powerfully influenced, we shall find that they may be classed under four heads: namely, Climate, Food, Soil, and the General Aspect of Nature; by which last, I mean those appearances which, though presented chiefly to the sight, have, through the medium of that or other senses, directed the association of ideas, and hence in different countries have given rise to different habits of national thought. To one of these four classes, may be referred all the external phenomena by which Man has been permanently affected. The last of these classes, or what I call the General Aspect of Nature, produces its principal results by exciting the imagination, and by suggesting those innumerable superstitions which are the great obstacles to advancing knowledge. And as, in the infancy of a people, the power of such superstitions is supreme, it has happened that the various Aspects of Nature have caused corresponding varieties in the popular character, and have imparted to the national religion peculiarities which, under certain circumstances, it is impossible to efface. The other three agents, namely, Climate, Food, and Soil, have, so far as we are aware, had no direct influence of this sort; but they have, as I am about to prove, originated the most important consequences in regard to the general organization of society, and from them there have followed many of those large and conspicuous differences between nations, which are often ascribed to some fundamental difference in the various races into which mankind is divided. But while such original distinctions of race are altogether hypothetical,[38] the discrepancies which are caused by difference of climate, food, and soil, are capable of a satisfactory explanation, and, when understood, will be found to clear up many of the difficulties which still obscure the study of history. I purpose, therefore, in the first place, to examine the laws of these three vast agents in so far as they are connected with Man in his social condition; and having traced the working of those laws with as much precision as the present state of physical knowledge will allow, I shall then examine the remaining agent, namely, the General Aspect of Nature, and shall endeavour to point out the most important divergencies to which its variations have, in different countries, naturally given rise.

Beginning, then, with climate, food, and soil, it is evident that these three physical powers are in no small degree dependent on each other: that is to say, there is a very close connexion between the climate of a country and the food which will ordinarily be grown in that country; while at the same time the food is itself influenced by the soil which produces it, as also by the elevation or depression of the land, by the state of the atmosphere, and, in a word, by all those conditions to the assemblage of which the name of Physical Geography is, in its largest sense, commonly given.[39]

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[38] I cordially subscribe to the remark of one of the greatest thinkers of our time, who says of the supposed differences of race, 'of all vulgar modes of escaping from the consideration of the effect of social and moral influences on the human mind, the most vulgar is that of attributing the diversities of conduct and character to inherent natural differences.' *Mill's Principles of Political Economy*, vol. i. p. 390. Ordinary writers are constantly falling into the error of assuming the existence of this difference, which may or may not exist but which most assuredly has never been proved. Some singular instances of this will be found in *Alison's History of Europe*, vol. ii. p. 336, vol. vi. p. 136, vol. viii. pp. 525, 526, vol. xiii. p. 347; where the historian thinks that by a few strokes of his pen he can settle a question of the greatest difficulty, connected with some of the most intricate problems in physiology. On the supposed relation between race and temperament, see *Comte*, *Philosophie Positive*, vol. iii. p. 355.

[39] As to the proper limits of physical geography, see *Prichard on Ethnology*, in *Report of the British Association for* 1847, p. 235. The word 'climate' I always use in the narrow and popular sense. Dr. Forry and many previous writers make it nearly coincide with 'physical geography:' 'Climate constitutes the aggregate of all the external physical circumstances appertaining to each locality in its relation to organic nature.' *Forry's Climate of the United States and its Endemic Influences*, New York, 1842, p. 127.

The union between these physical agents being thus intimate, it seems advisable to consider them not under their own separate heads, but rather under the separate heads of the effects produced by their united action. In this way we shall rise at once to a more comprehensive view of the whole question; we shall avoid the confusion that would be caused by artificially separating phenomena which are in themselves inseparable; and we shall be able to see more clearly the extent of that remarkable influence, which, in an early stage of society, the powers of Nature exercise over the fortunes of Man.

Of all the results which are produced among a people by their climate, food, and soil, the accumulation of wealth is the earliest, and in many respects the most important. For although the progress of knowledge eventually accelerates the increase of wealth, it is nevertheless certain that, in the first formation of society, the wealth must accumulate before the knowledge can begin. As long as every man is engaged in collecting the materials necessary for his own subsistence, there will be neither leisure nor taste for higher pursuits; no science can possibly be created, and the utmost that can be effected will be an attempt to economise labour by the contrivance of such rude and imperfect instruments as even the most barbarous people are able to invent.

In a state of society like this, the accumulation of wealth is the first great step that can be taken, because without wealth there can be no leisure, and without leisure there can be no knowledge. If what a people consume is always exactly equal to what they possess, there will be no residue, and therefore, no capital being accumulated, there will be no means by which the unemployed classes may be maintained.[40] But if the produce is greater than the consumption, an overplus arises, which, according to well-known principles, increases itself, and eventually becomes a fund out of which, immediately or remotely, every one is supported who does not create the wealth upon which he lives. And now it is that the existence of an intellectual class first becomes possible, because for the first time there exists a previous accumulation, by means of which men can use what they did not produce, and are thus enabled to devote themselves to subjects for which at an earlier period the pressure of their daily wants would have left them no time.

Thus it is that of all the great social improvements the accumulation of wealth must be the first, because without it there can be neither taste nor leisure for that acquisition of knowledge on which, as I shall hereafter prove, the progress of civilization depends. Now, it is evident that among an entirely ignorant people, the rapidity with which wealth is created will be solely regulated by the physical peculiarities of their country. At a later period, and when the wealth has been capitalized, other causes come into play; but until this occurs, the progress can only depend on two circumstances: first on the energy and regularity with which labour is conducted, and secondly on the returns made to that labour by the bounty of nature. And these two causes are themselves the result of physical antecedents. The returns made to labour are governed by the fertility of the soil, which is itself regulated partly by the admixture of its chemical components, partly by the extent to which, from rivers or from other natural causes, the soil is irrigated, and partly by the heat and humidity of the atmosphere. On the other hand, the energy and regularity with which labour is conducted, will be entirely dependent on the influence of climate. This will display itself in two different ways. The first, which is a very obvious consideration, is, that if the heat is intense, men will be indisposed, and in some degree unfitted, for that active industry which in a milder climate they might willingly have exerted. The other consideration, which has been less noticed, but is equally important, is, that climate influences labour not only by enervating the labourer or by invigorating him, but also by the effect it produces on the regularity of his habits.[41] Thus we find that no people living in a very northern latitude have ever possessed that steady and unflinching industry for which the inhabitants of temperate regions are

[40] By unemployed classes, I mean what Adam Smith calls the unproductive classes; and though both expressions are strictly speaking inaccurate, the word ‘unemployed’ seems to convey more clearly than any other the idea in the text.

[41] This has been entirely neglected by the three most philosophical writers on climate: Montesquieu, Hume, and M. Charles Comte in his *Traité de Législation*. It is also omitted in the remarks of M. Guizot on the influence of climate, *Civilisation en Europe*, p. 97.

remarkable. The reason of this becomes clear, when we remember that in the more northern countries the severity of the weather, and, at some seasons, the deficiency of light, render it impossible for the people to continue their usual out-of-door employments. The result is, that the working classes being compelled to cease from their ordinary pursuits, are rendered more prone to desultory habits; the chain of their industry is as it were broken, and they lose that impetus which long-continued and uninterrupted practice never fails to give. Hence there arises a national character more fitful and capricious than that possessed by a people whose climate permits the regular exercise of their ordinary industry. Indeed, so powerful is this principle, that we may perceive its operation even under the most opposite circumstances. It would be difficult to conceive a greater difference in government, laws, religion, and manners, than that which distinguishes Sweden and Norway on the one hand, from Spain and Portugal on the other. But these four countries have one great point in common. In all of them, continued agricultural industry is impracticable. In the two southern countries, labour is interrupted by the heat, by the dryness of the weather, and by the consequent state of the soil. In the two northern countries, the same effect is produced by the severity of the winter and the shortness of the days. The consequence is, that these four nations, though so different in other respects, are all remarkable for a certain instability and fickleness of character; presenting a striking contrast to the more regular and settled habits which are established in countries whose climate subjects the working classes to fewer interruptions, and imposes on them the necessity of a more constant and unremitting employment.[42]

These are the great physical causes by which the creation of wealth is governed. There are, no doubt, other circumstances which operate with considerable force, and which, in a more advanced state of society, possess an equal, and sometimes a superior, influence. But this is at a later period; and looking at the history of wealth in its earliest stage, it will be found to depend entirely on soil and climate: the soil regulating the returns made to any given amount of labour; the climate regulating the energy and constancy of the labour itself. It requires but a hasty glance at past events, to prove the immense power of these two great physical conditions. For there is no instance in history of any country being civilized by its own efforts, unless it has possessed one of these conditions in a very favourable form. In Asia, civilization has always been confined to that vast tract where a rich and alluvial soil has secured to man that wealth without some share of which no intellectual progress can begin. This great region extends, with a few interruptions, from the east of Southern China to the western coasts of Asia Minor, of Phœnicia, and of Palestine. To the north of this immense belt, there is a long line of barren country which has invariably been peopled by rude and wandering tribes, who are kept in poverty by the ungenial nature of the soil, and who, as long as they remained on it, have never emerged from their uncivilized state. How entirely this depends on physical causes, is evident from the fact that these same Mongolian and Tartarian hordes have, at different periods, founded great monarchies in China, in India, and in Persia, and have, on all such occasions, attained a civilization nowise inferior to that possessed by the most nourishing of the ancient kingdoms. For in the fertile plains of Southern Asia,[43] nature has supplied all the materials of wealth; and there it was that these barbarous tribes acquired for the first time some degree of refinement, produced a national literature, and organized a national polity; none of which things they, in their native land, had been able to effect.[44] In the same way, the Arabs in their own country have, owing to the extreme aridity

[42] See the admirable remarks in *Laing's Denmark*, 1852, pp. 204, 366, 367; though Norway appears to be a better illustration than Denmark. In *Rey's Science Sociale*, vol. i. pp. 195, 196, there are some calculations respecting the average loss to agricultural industry caused by changes in the weather; but no notice is taken of the connexion between these changes, when abrupt, and the tone of the national character.

[43] This expression has been used by different geographers in different senses; but I take it in its common acceptation, without reference to the more strictly physical view of Ritter and his followers in regard to Central Asia. See *Prichard's Physical History of Mankind*, vol. iv. p. 278, edit. 1844. At p. 92, Prichard makes the Himalaya the southern boundary of Central Asia.

[44] There is reason to believe that the Tartars of Thibet received even their alphabet from India. See the interesting Essay on Tartarian Coins in *Journal of Asiatic Society*, vol. iv. pp. 276, 277; and on the Scythian Alphabet, see vol. xii. p. 336.

of their soil,[45] always been a rude and uncultivated people; for in their case, as in all others, great ignorance is the fruit of great poverty. But in the seventh century they conquered Persia;[46] in the eighth century they conquered the best part of Spain;[47] in the ninth century they conquered the Punjaub, and eventually nearly the whole of India.[48] Scarcely were they established in their fresh settlements, when their character seemed to undergo a great change. They, who in their original land were little else than roving savages, were now for the first time able to accumulate wealth, and, therefore, for the first time did they make some progress in the arts of civilization. In Arabia they had been a mere race of wandering shepherds;[49] in their new abodes they became the founders of mighty empires – they built cities, endowed schools, collected libraries; and the traces of their power are still to be seen at Cordova, at Bagdad, and at Delhi.[50] Precisely in the same manner, there is adjoining Arabia at the north, and only separated from it elsewhere by the narrow waters of the Red Sea, an immense sandy plain, which, covering the whole of Africa in the same latitude, extends westward until it reaches the shores of the Atlantic.[51] This enormous tract is, like Arabia, a barren waste;[52] and therefore,

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[45] In *Somerville's Physical Geography*, vol. i. p. 132, it is said that in Arabia there are 'no rivers;' but Mr. Wellsted (*Travels in Arabia*, vol. ii. p. 409) mentions one which empties itself into the sea five miles west of Aden. On the streams in Arabia, see *Meiners über die Fruchtbarkeit der Länder*, vol. i. pp. 149, 150. That the sole deficiency is want of irrigation appears from Burckhardt, who says (*Travels in Arabia*, vol. i. p. 240), 'In Arabia, wherever the ground can be irrigated by wells, the sands may be soon made productive.' And for a striking description of one of the oases of Oman, which shows what Arabia might have been with a good river system, see *Journal of Geographical Society*, vol. vii. pp. 106, 107.

[46] Mr. Morier (*Journal of Geog. Soc.* vol. vii. p. 230) says, 'the conquest of Persia by the Saracens a. d. 651.' However, the fate of Persia was decided by the battles of Kudseah and Nahavund, which were fought in 638 and 641: see *Malcolm's History of Persia*, vol. i. pp. xvi. 139, 142.

[47] In 712. *Hallam's Middle Ages*, vol. i. p. 369.

[48] They were established in the Punjaub early in the ninth century, but did not conquer Guzerat and Malwa until five hundred years later. Compare Wilson's note in the *Vishnu Purana*, pp. 481, 482, with *Asiatic Researches*, vol. ix. pp. 187, 188, 203. On their progress in the more southern part of the Peninsula, see *Journal of Asiatic Society*, vol. iii. pp. 222, 223, vol. iv. pp. 28–30.

[49] 'A race of pastoral barbarians.' *Dickinson on the Arabic Language*, in *Journal of Asiat. Society*, vol. v. p. 323. Compare *Reynier*, *Economie des Arabes*, pp. 27, 28; where, however, a very simple question is needlessly complicated. The old Persian writers bestowed on them the courteous appellation of 'a band of naked lizard-eaters.' *Malcolm's Hist. of Persia*, vol. i. p. 133. Indeed, there are few things in history better proved than the barbarism of a people whom some writers wish to invest with a romantic interest. The eulogy passed on them by Meiners is rather suspicious, for he concludes by saying, 'die Eroberungen der Araber waren höchst selten so blutig und zerstörend, als die Eroberungen der Tataren, Persen, Türken, u.s.w. in ältern und neuern Zeiten waren.' *Fruchtbarkeit der Länder*, vol. i. p. 153. If this is the best that can be said, the comparison with Tartars and Turks does not prove much; but it is singular that this learned author should have forgotten a passage in Diodorus Siculus which gives a pleasant description of them nineteen centuries ago on the eastern side: *Bibliothec. Hist.* lib. ii. vol. ii. p. 137. ἔχουσι δὲ βίον λῃστρικὸν, καὶ πολλὴν τῆς ὁμόρον χώρας κατατρέχοντες λῃστεύουσιν, &c.

[50] The only branch of knowledge which the Arabians ever raised to a science was astronomy, which began to be cultivated under the caliphs about the middle of the eighth century, and went on improving until 'la ville de Bagdad fut, pendant le dixième siècle, le théâtre principal de l'astronomie chez les orientaux.' *Montucla*, *Histoire des Mathématiques*, vol. i. pp. 355, 364. The old Pagan Arabs, like most barbarous people living in a clear atmosphere, had such an empirical acquaintance with the celestial phenomena as was used for practical purposes; but there is no evidence to justify the common opinion that they studied this subject as a science. Dr. Dorn (*Transactions of the Asiatic Society*, vol. ii. p. 371) says, 'of a scientific knowledge of astronomy among them no traces can be discovered.' Beausobre (*Histoire de Manichée*, vol. i. p. 20) is quite enthusiastic about the philosophy of the Arabs in the time of Pythagoras! and he tells us, that 'ces peuples out toujours cultivé les sciences.' To establish this fact, he quotes a long passage from a life of Mohammed written early in the eighteenth century by Boulainvilliers, whom he calls, 'un des plus beaux génies de France.' If this is an accurate description, those who have read the works of Boulainvilliers will think that France was badly off for men of genius; and as to his life of Mohammed, it is little better than a romance: the author was ignorant of Arabic, and knew nothing which had not been already communicated by Maracci and Pococke. See *Biographie Universelle*, vol. v. p. 321.In regard to the later Arabian astronomers, one of their great merits was to approximate to the value of the annual precession much closer than Ptolemy had done. See *Grant's History of Physical Astronomy*, 1852, p. 319.

[51] Indeed it goes beyond it: 'the trackless sands of the Sahara desert, which is even prolonged for miles into the Atlantic Ocean in the form of sandbanks.' *Somerville's Physical Geography*, vol. i. p. 149. For a singular instance of one of these sandbanks being formed into an island, see *Journal of Geograph. Society*, vol. ii. p. 284. The Sahara desert, exclusive of Bornou and Darfour, covers an area of 194,000 square leagues; that is, nearly three times the size of France, or twice the size of the Mediterranean. Compare *Lyell's Geology*, p. 694, with *Somerville's Connexion of the Sciences*, p. 294. As to the probable southern limits of the plateau of the Sahara, see *Richardson's Mission to Central Africa*, 1853, vol. ii. pp. 146, 156; and as to the part of it adjoining the Mandingo country, see *Mungo Park's Travels*, vol. i. pp. 237, 238. Respecting the country south of Mandara, some scanty information was collected by Denham in the neighbourhood of Lake Tchad. *Denham's Northern and Central Africa*, pp. 121, 122, 144–146.

as in Arabia, the inhabitants have always been entirely uncivilized, acquiring no knowledge, simply because they have accumulated no wealth.[53] But this great desert is, in its eastern part, irrigated by the waters of the Nile, the overflowing of which covers the sand with a rich alluvial deposit, that yields to labour the most abundant, and indeed the most extraordinary, returns.[54] The consequence is, that in that spot, wealth was rapidly accumulated, the cultivation of knowledge quickly followed, and this narrow strip of land[55] became the seat of Egyptian civilization; a civilization which, though grossly exaggerated,[56] forms a striking contrast to the barbarism of the other nations of Africa, none of which have been able to work out their own progress, or emerge, in any degree, from the ignorance to which the penury of nature has doomed them.

These considerations clearly prove that of the two primary causes of civilization, the fertility of the soil is the one which in the ancient world exercised most influence. But in European civilization, the other great cause, that is to say, climate, has been the most powerful; and this, as we have seen, produces an effect partly on the capacity of the labourer for work, partly on the regularity or irregularity of his habits. The difference in the result has curiously corresponded with the difference in the cause. For, although all civilization must have for its antecedent the accumulation of wealth, still what subsequently occurs will be in no small degree determined by the conditions under which the accumulation took place. In Asia, and in Africa, the condition was a fertile soil, causing an abundant return; in Europe, it was a happier climate, causing more successful labour. In the former case, the effect depends on the relation between the soil and its produce; in other words, the mere operation of one part of external nature upon another. In the latter case, the effect depends on the relation between the climate and the labourer; that is, the operation of external nature not upon itself, but upon man. Of these two classes of relations, the first, being the less complicated, is the less liable to disturbance,

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[52] Richardson, who travelled through it south of Tripoli, notices its 'features of sterility, of unconquerable barrenness.' *Richardson's Sahara*, 1848, vol. i. p. 86; and see the striking picture at p. 409. The long and dreary route from Mourzouk to Yeou, on Lake Tchad, is described by Denham, one of the extremely few Europeans who have performed that hazardous journey. *Denham's Central Africa*, pp. 2–60. Even on the shore of the Tchad there is hardly any vegetation, 'a coarse grass and a small bell-flower being the only plants that I could discover,' p. 90. Compare his remark on Bornou, p. 317. The condition of part of the desert in the fourteenth century is described in the *Travels of Ibn Batuta*, p. 233, which should be compared with the account given by Diodorus Siculus of the journey of Alexander to the temple of Ammon. *Bibliothec. Historic.* lib. xvii. vol. vii. p. 348.

[53] Richardson, who travelled in 1850 from Tripoli to within a few days of Lake Tchad, was struck by the stationary character of the people. He says, 'neither in the desert nor in the kingdoms of Central Africa is there any march of civilization. All goes on according to a certain routine established for ages past.' *Mission to Central Africa*, vol. i. pp. 304, 305. See similar remarks in *Pallme's Travels in Kordofan*, pp. 108, 109.

[54] Abd-Allatif, who was in Egypt early in the thirteenth century, gives an interesting account of the rising of the Nile, to which Egypt owes its fertility. *Abd-Allatif*, *Relation de l'Egypte*, pp. 329–340, 374–376, and Appendix, p. 504. See also on these periodical inundations. *Wilkinson's Ancient Egyptians*, vol. iv. pp. 101–104; and on the half-astronomical half theological notions connected with them, pp. 372–377, vol. v. pp. 291, 292. Compare on the religious importance of the Nile *Bunsen's Egypt*, vol. i. p. 409. The expression, therefore, of Herodotus (book ii. chap. v. vol. i. p. 484), δῶρον τοῦ ποταμοῦ is true in a much larger sense than he intended; since to the Nile Egypt owes all the physical peculiarities which distinguish it from Arabia and the great African desert. Compare *Heeren's African Nations*, vol. ii. p. 58; *Reynier*, *Economie des Arabes*, p. 3; *Postan's on the Nile and Indus*, in *Journal of Asiatic Society*, vol. vii. p. 275; and on the difference between the soil of the Nile and that of the surrounding desert, see *Volney*, *Voyage en Syrie et en Egypte*, vol. i. p. 14.

[55] 'The average breadth of the valley from one mountain-range to the other, between Cairo in Lower, and Edfoo in Upper Egypt, is only about seven miles; and that of the cultivable land, whose limits depend on the inundation, scarcely exceeds five and a half.' *Wilkinson's Ancient Egyptians*, vol. i. p. 216. According to Gerard, 'the mean width of the valley between Syene and Cairo is about nine miles.' Note in *Heeren's African Nations*, vol. ii. p. 62.

[56] I will give one instance of this from an otherwise sensible writer, and a man too of considerable learning: 'As to the physical knowledge of the Egyptians, their cotemporaries gave them credit for the astonishing power of their magic; and as we cannot suppose that the instances recorded in Scripture were to be attributed to the exertion of supernatural powers, we must conclude that they were in possession of a more intimate knowledge of the laws and combinations of nature than what is professed by the most learned men of the present age.' *Hamilton's Ægyptiaca*, pp. 61, 62. It is a shame that such nonsense should be written in the nineteenth century: and yet a still more recent author (*Vyse on the Pyramids*, vol. i. p. 28) assures us that 'the Egyptians, for especial purposes, were endowed with great wisdom and science.' Science properly so called, the Egyptians had none; and as to their wisdom, it was considerable enough to distinguish them from barbarous nations like the old Hebrews, but it was inferior to that of the Greeks, and it was of course immeasurably below that of modern Europe.

and therefore came sooner into play. Hence it is, that, in the march of civilization, the priority is unquestionably due to the most fertile parts of Asia and Africa. But although their civilization was the earliest, it was very far, indeed, from being the best or most permanent. Owing to circumstances which I shall presently state, the only progress which is really effective depends, not upon the bounty of nature, but upon the energy of man. Therefore it is, that the civilization of Europe, which, in its earliest stage, was governed by climate, has shown a capacity of development unknown to those civilizations which were originated by soil. For the powers of nature, notwithstanding their apparent magnitude, are limited and stationary; at all events, we have not the slightest proof that they have ever increased, or that they will ever be able to increase. But the powers of man, so far as experience and analogy can guide us, are unlimited; nor are we possessed of any evidence which authorizes us to assign even an imaginary boundary at which the human intellect will, of necessity, be brought to a stand. And as this power which the mind possesses of increasing its own resources, is a peculiarity confined to man, and one eminently distinguishing him from what is commonly called external nature, it becomes evident that the agency of climate, which gives him wealth by stimulating his labour, is more favourable to his ultimate progress than the agency of soil, which likewise gives him wealth, but which does so, not by exciting his energies, but by virtue of a mere physical relation between the character of the soil and the quantity or value of the produce that it almost spontaneously affords.

Thus far as to the different ways in which climate and soil affect the creation of wealth. But another point of equal, or perhaps of superior, importance remains behind. After the wealth has been created, a question arises as to how it is to be distributed; that is to say, what proportion is to go to the upper classes, and what to the lower. In an advanced stage of society, this depends upon several circumstances of great complexity, and which it is not necessary here to examine.[57] But in a very early stage of society, and before its later and refined complications have begun, it may, I think, be proved that the distribution of wealth is, like its creation, governed entirely by physical laws; and that those laws are moreover so active as to have invariably kept a vast majority of the inhabitants of the fairest portion of the globe in a condition of constant and inextricable poverty. If this can be demonstrated, the immense importance of such laws is manifest. For since wealth is an undoubted source of power, it is evident that, supposing other things equal, an inquiry into the distribution of wealth is an inquiry into the distribution of power, and, as such, will throw great light on the origin of those social and political inequalities, the play and opposition of which form a considerable part of the history of every civilized country.

If we take a general view of this subject, we may say that after the creation and accumulation of wealth have once fairly begun, it will be distributed among two classes, those who labour, and those who do not labour; the latter being, as a class, the more able, the former the more numerous. The fund by which both classes are supported is immediately created by the lower class, whose physical energies are directed, combined, and as it were economized, by the superior skill of the upper class. The reward of the workmen is called their wages; the reward of the contrivers is called their profits. At a later period, there will arise what may be called the saving class; that is, a body of men who neither contrive nor work, but lend their accumulations to those who contrive, and in return for the loan, receive a part of that reward which belongs to the contriving class. In this case, the members of the saving class are rewarded for their abstinence in refraining from spending their accumulations, and this reward is termed the interest of their money; so that there is made a threefold division – Interest, Profits, and Wages. But this is a subsequent arrangement, which can only take place to

[57] Indeed many of them are still unknown; for, as M. Rey justly observes, most writers pay too exclusive an attention to the production of wealth, and neglect the laws of its distribution. *Rey*, *Science Sociale*, vol. iii. p. 271. In confirmation of this, I may mention the theory of rent, which was only discovered about half a century ago, and which is connected with so many subtle arguments that it is not yet generally adopted; and even some of its advocates have shown themselves unequal to defending their own cause. The great law of the ratio between the cost of labour and the profits of stock, is the highest generalization we have reached respecting the distribution of wealth; but it cannot be consistently admitted by anyone who holds that rent enters into price.

any extent when wealth has been considerably accumulated; and in the stage of society we are now considering, this third, or saving class, can hardly be said to have a separate existence.[58] For our present purpose, therefore, it is enough to ascertain what those natural laws are, which, as soon as wealth is accumulated, regulate the proportion in which it is distributed to the two classes of labourers and employers.

Now, it is evident that wages being the price paid for labour, the rate of wages must, like the price of all other commodities, vary according to the changes in the market. If the supply of labourers outstrips the demand, wages will fall; if the demand exceeds the supply, they will rise. Supposing, therefore, that in any country there is a given amount of wealth to be divided between employers and workmen, every increase in the number of the workmen will tend to lessen the average reward each can receive. And if we set aside those disturbing causes by which all general views are affected, it will be found that, in the long-run, the question of wages is a question of population; for although the total sum of the wages actually paid depends upon the largeness of the fund from which they are drawn, still the amount of wages received by each man must diminish as the claimants increase, unless, owing to other circumstances, the fund itself should so advance as to keep pace with the greater demands made upon it.[59]

To know the circumstances most favourable to the increase of what may be termed the wages-fund is a matter of great moment, but is one with which we are not immediately concerned. The question we have now before us, regards not the accumulation of wealth, but its distribution; and the object is, to ascertain what those physical conditions are, which, by encouraging a rapid growth of population, over-supply the labour market, and thus keep the average rate of wages at a very low point.

Of all the physical agents by which the increase of the labouring classes is affected, that of food is the most active and universal. If two countries, equal in all other respects, differ solely in this – that in one the national food is cheap and abundant, and in the other scarce and dear, the population of the former country will inevitably increase more rapidly than the population of the latter.[60] And, by a parity of reasoning, the average rate of wages will be lower in the former than in the latter, simply because the labour-market will be more amply stocked.[61] An inquiry, therefore, into the physical laws on which the food of different countries depends, is, for our present purpose, of the greatest importance; and fortunately it is one respecting which we are able, in the present state of chemistry and physiology, to arrive at some precise and definite conclusions.

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[58] In a still more advanced stage, there is a fourth division of wealth, and part of the produce of labour is absorbed by rent. This, however, is not an element of price, but a consequence of it; and in the ordinary march of affairs, considerable time must elapse before it can begin. Rent, in the proper sense of the word, is the price paid for using the natural and indestructible powers of the soil, and must not be confused with rent commonly so called; for this last also includes the profits of stock. I notice this, because several of the opponents of Ricardo have placed the beginning of rent too early, by overlooking the fact that apparent rent is very often profits disguised.

[59] 'Wages depend, then, on the proportion between the number of the labouring population, and the capital or other funds devoted to the purchase of labour; we will say, for shortness, the capital. If wages are higher at one time or place than at another, if the subsistence and comfort of the class of hired labourers are more ample, it is, and can be, for no other reason than because capital bears a greater proportion to population. It is not the absolute amount of accumulation or of production that is of importance to the labouring class; it is not the amount even of the funds destined for distribution among the labourers; it is the proportion between those funds and the numbers among whom they are shared. The condition of the class can be bettered in no other way than by altering that proportion to their advantage; and every scheme for their benefit which does not proceed on this as its foundation, is, for all permanent purposes, a delusion.' *Mill's Principles of Political Economy*, 1849, vol. i. p. 425. See also vol. ii. pp. 264, 265, and *M'Culloch's Political Economy*, pp. 379, 380. Ricardo, in his *Essay on the Influence of a Low Price of Corn*, has stated, with his usual terseness, the three possible forms of this question: 'The rise or fall of wages is common to all states of society, whether it be the stationary, the advancing, or the retrograde state. In the stationary state, it is regulated wholly by the increase or falling-off of the population. In the advancing state, it depends on whether the capital or the population advance at the more rapid course. In the retrograde state, it depends on whether population or capital decrease with the greater rapidity.' *Ricardo's Works*, p. 379.

[60] The standard of comfort being of course supposed the same.

[61] 'No point is better established, than that the supply of labourers will always ultimately be in proportion to the means of supporting them.' *Principles of Political Economy*, chap. xxi. in *Ricardo's Works*, p. 176. Compare *Smith's Wealth of Nations*, book i. chap. xi. p. 86, and *M'Culloch's Political Economy*, p. 222.

The food consumed by man produces two, and only two, effects necessary to his existence. These are, first to supply him with that animal heat without which the functions of life would stop; and secondly, to repair the waste constantly taking place in his tissues, that is, in the mechanism of his frame. For each of these separate purposes there is a separate food. The temperature of our body is kept up by substances which contain no nitrogen, and are called non-azotized; the incessant decay in our organism is repaired by what are known as azotized substances, in which nitrogen is always found.[62] In the former case, the carbon of non-azotized food combines with the oxygen we take in, and gives rise to that internal combustion by which our animal heat is renewed. In the latter case, nitrogen having little affinity for oxygen,[63] the nitrogenous or azotized food is, as it were, guarded against combustion;[64] and being thus preserved, is able to perform its duty of repairing the tissues, and supplying those losses which the human organism constantly suffers in the wear and tear of daily life.

These are the two great divisions of food;[65] and if we inquire into the laws which regulate the relation they bear to man, we shall find that in each division the most important agent is climate. When men live in a hot country, their animal heat is more easily kept up than when they live in a cold one; therefore they require a smaller amount of that non-azotized food, the sole business of which is to maintain at a certain point the temperature of the body. In the same way, they, in the hot country, require a smaller amount of azotized food, because on the whole their bodily exertions are less frequent, and on that account the decay of their tissues is less rapid.[66]

Since, therefore, the inhabitants of hot climates do, in their natural and ordinary state, consume less food than the inhabitants of cold ones, it inevitably follows that, provided other things remain equal, the growth of population will be more rapid in countries which are hot than in those which are cold. For practical purposes, it is immaterial whether the greater plenty of a substance by which the people are fed arises from a larger supply, or whether it arises from a smaller consumption. When men eat less, the result will be just the same as if they had more; because the same amount of nutriment will go farther, and thus population will gain a power of increasing more quickly than it could do in

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[62] The division of food into azotized and non-azotized is said to have been first pointed out by Magendie. See *Müller's Physiology*, vol. i. p. 525. It is now recognised by most of the best authorities. See, for instance, *Liebig's Animal Chemistry*, p. 134; *Carpenter's Human Physiology*, p. 685; *Brande's Chemistry*, vol. ii. pp. 1218, 1870. The first tables of food constructed according to it were by Boussingault; see an elaborate essay by Messrs. Lawes and Gilbert on *The Composition of Foods*, in *Report of British Association for 1852*, p. 323: but the experiments made by these gentlemen are neither numerous nor diversified enough to establish a general law; still less can we accept their singular assertion, p. 346, that the comparative prices of different foods are a test of the nutriment they comparatively contain.

[63] 'Of all the elements of the animal body, nitrogen has the feeblest attraction for oxygen; and, what is still more remarkable, it deprives all combustible elements with which it combines, to a greater or less extent, of the power of combining with oxygen, that is, of undergoing combustion.' *Liebig's Letters on Chemistry*, p. 372.

[64] The doctrine of what may be called the protecting power of some substances is still imperfectly understood, and until late in the eighteenth century, its existence was hardly suspected. It is now known to be connected with the general theory of poisons. See *Turner's Chemistry*, vol. i. p. 516. To this we must probably ascribe the fact that several poisons which are fatal when applied to a wounded surface, may be taken into the stomach with impunity. *Brodie's Physiological Researches*, 1851, pp. 137, 138. It seems more reasonable to refer this to chemical laws than to hold, with Sir Benjamin Brodie, that some poisons 'destroy life by paralysing the muscles of respiration without immediately affecting the action of the heart.'

[65] Prout's well-known division into saccharine, oily, and albuminous, appears to me of much inferior value, though I observe that it is adopted in the last edition of *Elliotson's Human Physiology*, pp. 65, 160. The division by M. Lepelletier into 'les alimens solides et les boissons' is of course purely empirical. *Lepelletier*, *Physiologie Médicale*, vol. ii. p. 100, Paris, 1832. In regard to Prout's classification, compare *Burdach's Traité de Physiologie*, vol. ix. p. 240, with *Wagner's Physiology*, p. 452.

[66] The evidence of an universal connexion in the animal frame between exertion and decay, is now almost complete. In regard to the muscular system, see *Carpenter's Human Physiology*, pp. 440, 441, 581, edit. 1846: 'there is strong reason to believe the waste or decomposition of the muscular tissue to be in exact proportion to the degree in which it is exerted.' This perhaps would be generally anticipated even in the absence of direct proof; but what is more interesting, is that the same principle holds good of the nervous system. The human brain of an adult contains about one and a half per cent of phosphorus; and it has been ascertained, that after the mind has been much exercised, phosphates are excreted, and that in the case of inflammation of the brain their excretion (by the kidneys) is very considerable. See *Paget's Lectures on Surgical Pathology*, 1853, vol. i. pp. 6, 7, 434; *Carpenter's Human Physiology*, pp. 192, 193, 222; *Simon's Animal Chemistry*, vol. ii. p. 426; *Henle*, *Anatomie Générale*, vol. ii. p. 172. The reader may also consult respecting the phosphorus of the brain the recent very able work of MM. Robin et Verdeil, *Chimie Anatomique*, vol. i. p. 215, vol. ii. p. 348, Paris, 1853. According to these writers (vol. iii. p. 445), its existence in the brain was first announced by Hensing, in 1779.

a colder country, where, even if provisions were equally abundant, they, owing to the climate, would be sooner exhausted.

This is the first point of view in which the laws of climate are, through the medium of food, connected with the laws of population, and therefore with the laws of the distribution of wealth. But there is also another point of view, which follows the same line of thought, and will be found to strengthen the argument just stated. This is, that in cold countries, not only are men compelled to eat more than in hot ones, but their food is dearer, that is to say, to get it is more difficult, and requires a greater expenditure of labour. The reason of this I will state as briefly as possible, without entering into any details beyond those which are absolutely necessary for a right understanding of this interesting subject.

The objects of food are, as we have seen, only two: namely, to keep up the warmth of the body, and repair the waste in the tissues.[67] Of these two objects, the former is effected by the oxygen of the air entering our lungs, and, as it travels through the system, combining with the carbon which we take in our food.[68] This combination of oxygen and carbon never can occur without producing a considerable amount of heat, and it is in this way that the human frame is maintained at its necessary temperature.[69] By virtue of a law familiar to chemists, carbon and oxygen, like all other elements, will only unite in certain definite proportions;[70] so that to keep up a healthy balance, it is needful that the food which contains the carbon should vary according to the amount of oxygen taken in: while it is equally needful that we should increase the quantity of both of these constituents whenever a greater external cold lowers the temperature of the body. Now it is obvious that in a very cold

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[67] Though both objects are equally essential, the former is usually the more pressing; and it has been ascertained by experiment, what we should expect from theory, that when animals are starved to death, there is a progressive decline in the temperature of their bodies; so that the proximate cause of death by starvation is not weakness, but cold. See *Williams's Principles of Medicine*, p. 36; and on the connexion between the loss of animal heat and the appearance of *rigor mortis* in the contractile parts of the body, see *Vogel's Pathological Anatomy of the Human Body*, p. 532. Compare the important and thoughtful work of Burdach, *Physiologie comme Science d'Observation*, vol. v. pp. 144, 436, vol. ix. p. 231.

[68] Until the last twenty or five-and-twenty years, it used to be supposed that this combination took place in the lungs; but more careful experiments have made it probable that the oxygen unites with the carbon in the circulation, and that the blood-corpuscules are the carriers of the oxygen. Compare *Liebig's Animal Chemistry*, p. 78; *Letters on Chemistry*, pp. 335, 336; *Turner's Chemistry*, vol. ii. p. 1319; *Müller's Physiology*, vol. i. pp. 92, 159. That the combination does not take place in the air-cells is moreover proved by the fact that the lungs are not hotter than other parts of the body. See *Müller*, vol. i. p. 348; *Thomson's Animal Chemistry*, p. 633; and *Brodie's Physiol. Researches*, p. 33. Another argument in favour of the red corpuscules being the carriers of oxygen, is that they are most abundant in those classes of the vertebrata which maintain the highest temperature; while the blood of invertebrata contains very few of them; and it has been doubted if they even exist in the lower articulata and mollusca. See *Carpenter's Human Physiol.* pp. 109, 532; *Grant's Comparative Anatomy*, p. 472; *Elliotson's Human Physiol.* p. 159. In regard to the different dimensions of corpuscules, see *Henle*, *Anatomie Générale*, vol. i. pp. 457–467, 494, 495; *Blainville*, *Physiologie Comparée*, vol. i. pp. 298, 299, 301–304; *Milne Edwards*, *Zoologie*, part i. pp. 54–56; *Fourth Report of British Association*, pp. 117, 118; *Simon's Animal Chemistry*, vol. i. pp. 103, 104; and, above all, the important observations of Mr. Gulliver (*Carpenter*, pp. 105, 106). These additions to our knowledge, besides being connected with the laws of animal heat and of nutrition, will, when generalized, assist speculative minds in raising pathology to a science. In the mean time I may mention the relation between an examination of the corpuscules and the theory of inflammation which Hunter and Broussais were unable to settle: this is, that the proximate cause of inflammation is the obstruction of the vessels by the adhesion of the pale corpuscules. Respecting this striking generalization, which is still on its trial, compare *Williams's Principles of Medicine*, 1848, pp. 258–265, with *Paget's Surgical Pathology*, 1853, vol. i. pp. 313–317; *Jones and Sieveking's Pathological Anatomy*, 1854, pp. 28, 105, 106. The difficulties connected with the scientific study of inflammation are evaded in *Vogel's Pathological Anatomy*, p. 418; a work which appears to me to have been greatly overrated.

[69] On the amount of heat disengaged by the union of carbon and oxygen, see the experiments of Dulong, in *Liebig's Animal Chemistry*, p. 44; and those of Despretz, in *Thomson's Animal Chemistry*, p. 634. Just in the same way, we find that the temperature of plants is maintained by the combination of oxygen with carbon: see *Balfour's Botany*, pp. 231, 232, 322, 323. As to the amount of heat caused generally by chemical combination, there is an essay well worth reading by Dr. Thomas Andrews in *Report of British Association for 1849*, pp. 63–78. See also *Report for 1852, Transac. of Sec.* p. 40, and *Liebig and Kopp's Reports on the Progress of Chemistry*, vol. i. p. 34, vol. iii. p. 16, vol. iv. p. 20; also *Pouillet*, *Elémens de Physique*, Paris, 1832, vol. i. part i. p. 411.

[70] The law of definite proportions, which, since the brilliant discoveries by Dalton, is the corner-stone of chemical knowledge, is laid down with admirable clearness in *Turner's Elements of Chemistry*, vol. i. pp. 146–151. Compare *Brande's Chemistry*, vol. i. pp. 139–144; *Cuvier*, *Progrès des Sciences*, vol. ii. p. 255; *Somerville's Connexion of the Sciences*, pp. 120, 121. But none of these writers have considered the law so philosophically as M. A. Comte, *Philosophie Positive*, vol. iii. pp. 133–176, one of the best chapters in his very profound, but ill-understood work.

climate, this necessity of providing a nutriment more highly carbonized will arise in two distinct ways. In the first place, the air being denser, men imbibe at each inspiration a greater volume of oxygen than they would do in a climate where the air is rarefied by heat.[71] In the second place, cold accelerates their respiration, and thus obliging them to inhale more frequently than the inhabitants of hot countries, increases the amount of oxygen which they on an average take in.[72] On both these grounds the consumption of oxygen becomes greater: it is therefore requisite that the consumption of carbon should also be greater; since by the union of these two elements in certain definite proportions, the temperature of the body and the balance of the human frame can alone be maintained.[73]

Proceeding from these chemical and physiological principles, we arrive at the conclusion, that the colder the country is in which a people live, the more highly carbonized will be their food. And this, which is a purely scientific inference, has been verified by actual experiment. The inhabitants of the polar regions consume large quantities of whale-oil and blubber; while within the tropics such food would soon put an end to life, and therefore the ordinary diet consists almost entirely of fruit, rice, and other vegetables. Now it has been ascertained by careful analysis, that in the polar food there is an excess of carbon; in the tropical food an excess of oxygen. Without entering into details, which to the majority of readers would be distasteful, it may be said generally, that the oils contain about six times as much carbon as the fruits, and that they have in them very little oxygen;[74] while starch, which is the most universal, and, in reference to nutrition, the most important constituent in the vegetable world,[75] is nearly half oxygen.[76]

The connexion between this circumstance and the subject before us is highly curious: for it is a most remarkable fact, and one to which I would call particular attention, that owing to some

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[71] 'Ainsi, dans des temps égaux, la quantité d'oxygène consommée par le même animal est d'autant plus grande que la température ambiante est moins élevée.' *Robin et Verdeil*, *Chimie Anatomique*, vol. ii. p. 44. Compare *Simon's Lectures on Pathology*, 1850, p. 188, for the diminished quantity of respiration in a high temperature; though one may question Mr. Simon's inference that *therefore* the blood is more venous in hot countries than in cold ones. This is not making allowance for the difference of diet, which corrects the difference of temperature.

[72] 'The consumption of oxygen in a given time may be expressed by the number of respirations.' *Liebig's Letters on Chemistry*, p. 314; and see *Thomson's Animal Chemistry*, p. 611. It is also certain that exercise increases the number of respirations; and birds, which are the most active of all animals, consume more oxygen than any others. *Milne Edwards*, *Zoologie*, part i. p. 88, part ii. p. 371; *Flourens*, *Travaux de Cuvier*, pp. 153, 154, 265, 266. Compare, on the connexion between respiration and the locomotive organs, *Beclard*, *Anatomie Générale*, pp. 39, 44; *Burdach*, *Traité de Physiologie*, vol. ix. pp. 485, 556–559; *Carus's Comparative Anatomy*, vol. i. pp. 99, 164, 358, vol. ii. pp. 142, 160; *Grant's Comparative Anatomy*, pp. 455, 495, 522, 529, 537; *Rymer Jones's Animal Kingdom*, pp. 369, 440, 692, 714, 720; *Owen's Invertebrata*, pp. 322, 345, 386, 505. Thus too it has been experimentally ascertained, that in human beings exercise increases the amount of carbonic-acid gas. *Mayo's Human Physiology*, p. 64; *Liebig and Kopp's Reports*, vol. iii. p. 359.If we now put these facts together, their bearing on the propositions in the text will become evident; because, on the whole, there is more exercise taken in cold climates than in hot ones, and there must therefore be an increased respiratory action. For proof that greater exercise is both taken and required, compare *Wrangel's Polar Expedition*, pp. 79, 102; *Richardson's Arctic Expedition*, vol. i. p. 385; *Simpson's North Coast of America*, pp. 49,88, which should be contrasted with the contempt for such amusements in hot countries. Indeed, in polar regions all this is so essential to preserve a normal state, that scurvy can only be kept off in the northern part of the American continent by taking considerable exercise: see *Crantz*, *History of Greenland*, vol. i. pp. 46, 62, 338.

[73] See the note at the end of this chapter.

[74] 'The fruits used by the inhabitants of southern climes do not contain, in a fresh state, more than 12 per cent. of carbon; while the blubber and train-oil which feed the inhabitants of polar regions contain 66 to 80 per cent. of that element.' *Liebig's Letters on Chemistry*, p. 320; see also p. 375, and *Turner's Chemistry*, vol. ii. p. 1315. According to Prout (*Mayo's Human Physiol.* p. 136), 'the proportion of carbon in oily bodies varies from about 60 to 80 per cent.' The quantity of oil and fat habitually consumed in cold countries is remarkable. Wrangel (*Polar Expedition*, p. 21) says of the tribes in the north-east of Siberia, 'fat is their greatest delicacy. They eat it in every possible shape; raw, melted, fresh, or spoilt.' See also *Simpson's Discoveries on the North Coast of America*, pp. 147, 404.

[75] 'So common, that no plant is destitute of it.' *Lindley's Botany*, vol. i. p. 111; and at p. 121, 'starch is the most common of all vegetable productions.' Dr. Lindley adds (vol. i. p. 292), that it is difficult to distinguish the grains of starch secreted by plants from cytoblasts. See also on the starch-granules, first noticed by M. Link, *Reports on Botany by the Ray Society*, pp. 223, 370; and respecting its predominance in the vegetable world, compare *Thomson's Chemistry of Vegetables*, pp. 650–652, 875; *Brande's Chemistry*, vol. ii. p. 1160; *Turner's Chemistry*, vol. ii. p. 1236; *Liebig and Kopp's Reports*, vol. ii. pp. 97, 98, 122.

[76] The oxygen is 49.39 out of 100. See the table in *Liebig's Letters on Chemistry*, p. 379. Amidin, which is the soluble part of starch, contains 53.33 per cent. of oxygen. See *Thomson's Chemistry of Vegetables*, p. 654, on the authority of Prout, who has the reputation of being an accurate experimenter.

more general law, of which we are ignorant, highly carbonized food is more costly than food in which comparatively little carbon is found. The fruits of the earth, of which oxygen is the most active principle, are very abundant; they may be obtained without danger, and almost without trouble. But that highly carbonized food, which in a very cold climate is absolutely necessary to life, is not produced in so facile and spontaneous a manner. It is not, like vegetables, thrown up by the soil; but it consists of the fat, the blubber, and the oil[77] of powerful and ferocious animals. To procure it, man must incur great risk and expend great labour. And although this is undoubtedly a contrast of extreme cases, still it is evident that the nearer a people approach to either extremity, the more subject will they be to the conditions by which that extremity is governed. It is evident that, as a general rule, the colder a country is, the more its food will be carbonized; the warmer it is, the more its food will be oxidized.[78] At the same time, carbonized food, being chiefly drawn from the animal world, is more difficult to obtain than oxidized food, which is drawn from the vegetable world.[79] The result has been that among nations where the coldness of the climate renders a highly carbonized diet essential, there is for the most part displayed, even in the infancy of society, a bolder and more adventurous character, than we find among those other nations whose ordinary nutriment, being highly oxidized, is easily obtained, and indeed is supplied to them, by the bounty of nature, gratuitously and without a struggle.[80] From this original divergence there follow many other consequences, which, however, I am not now concerned to trace; my present object being merely to point out how this difference of food affects the proportion in which wealth is distributed to the different classes.

The way in which this proportion is actually altered has, I hope, been made clear by the preceding argument; but it may be useful to recapitulate the facts on which the argument is based. The facts, then, are simply these. The rate of wages fluctuates with the population; increasing when the labour-market is under-supplied, diminishing when it is over-supplied. The population itself, though affected by many other circumstances, does undoubtedly fluctuate with the supply of food; advancing when the supply is plentiful, halting or receding when the supply is scanty. The food essential to life is scarcer in cold countries than in hot ones; and not only is it scarcer, but more of it is required;[81] so that on both grounds smaller encouragement is given to the growth of that population from whose ranks the labour-market is stocked. To express, therefore, the conclusion in its simplest form, we

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[77] Of which a single whale will yield 'cent vingt tonneaux.' *Cuvier*, *Règne Animal*, vol. i. p. 297. In regard to the solid food, Sir J. Richardson (*Arctic Expedition*, 1851, vol. i. p. 243) says that the inhabitants of the Arctic regions only maintain themselves by chasing whales and 'consuming blubber.'

[78] It is said, that to keep a person in health, his food, even in the temperate parts of Europe, should contain 'a full eighth more carbon in winter than in summer.' *Liebig's Animal Chemistry*, p. 16.

[79] The most highly carbonized of all foods are undoubtedly yielded by animals; the most highly oxidized by vegetables. In the vegetable kingdom there is, however, so much carbon, that its predominance, accompanied with the rarity of nitrogen, has induced chemical botanists to characterize plants as carbonized, and animals as azotized. But we have here to attend to a double antithesis. Vegetables are carbonized in so far as they are non-azotized; but they are oxidized in opposition to the highly carbonized animal food of cold countries. Besides this, it is important to observe that the carbon of vegetables is most abundant in the woody and unnutritious part, which is not eaten; while the carbon of animals is found in the fatty and oily parts, which are not only eaten, but are, in cold countries, greedily devoured.

[80] Sir J. Malcolm (*History of Persia*, vol. ii. p. 380), speaking of the cheapness of vegetables in the East, says, 'in some parts of Persia fruit has hardly any value.' Cuvier, in a striking passage (*Règne Animal*, vol. i. pp. 73, 74), has contrasted vegetable with animal food, and thinks that the former, being so easily obtained, is the more natural. But the truth is that both are equally natural: though when Cuvier wrote scarcely anything was known of the laws which govern the relation between climate and food. On the skill and energy required to obtain food in cold countries, see *Wrangel's Polar Expedition*, pp. 70, 71, 191, 192; *Simpson's Discoveries on the North Coast of America*, p. 249; *Crantz*, *History of Greenland*, vol. i. pp. 22, 32, 105, 131, 154, 155, vol. ii. pp. 203, 265, 324.

[81] 'Cabanis' (*Rapports du Physique et du Moral*, p. 313) says, 'Dans les temps et dans les pays froids on mange et l'on agit davantage.' That much food is eaten in cold countries, and little in hot ones, is mentioned by numerous travellers, none of whom are aware of the cause. See *Simpson's Discov. on North Coast of America*, p. 218; *Custine's Russie*, vol. iv. p. 66; *Wrangel's Expedition*, pp. 21, 327; *Crantz*, *History of Greenland*, vol. i. pp. 145, 360; *Richardson's Central Africa*, vol. ii. p. 46; *Richardson's Sahara*, vol. i. p. 137; *Denham's Africa*, p. 37; *Journal of Asiatic Society*, vol. v. p. 144, vol. viii. p. 188; *Burckhardt's Travels in Arabia*, vol. ii. p. 265; *Niebuhr*, *Description de l'Arabie*, p. 45; *Ulloa's Voyage to South America*, vol. i. pp. 403, 408; *Journal of Geograph. Society*, vol. iii. p. 283, vol. vi. p. 85, vol. xix. p. 121; *Spix and Martius's Travels in Brazil*, vol. i. p. 164; *Southey's History of Brazil*, vol. iii. p. 848; *Volney*, *Voyage en Syrie et en Egypte*, vol. i. pp. 379, 380, 460; *Low's Sarawak*, p. 140.

may say, that there is a strong and constant tendency in hot countries for wages to be low, in cold countries for them to be high.

Applying now this great principle to the general course of history, we shall find proofs of its accuracy in every direction. Indeed, there is not a single instance to the contrary. In Asia, in Africa, and in America, all the ancient civilizations were seated in hot climates; and in all of them the rate of wages was very low, and therefore the condition of the labouring classes very depressed. In Europe, for the first time, civilization arose in a colder climate: hence the reward of labour was increased, and the distribution of wealth rendered more equal than was possible in countries where an excessive abundance of food stimulated the growth of population. This difference produced, as we shall presently see, many social and political consequences of immense importance. But before discussing them, it may be remarked that the only apparent exception to what has been stated is one which strikingly verifies the general law. There is one instance, and only one, of a great European people possessing a very cheap national food. This people, I need hardly say, are the Irish. In Ireland the labouring classes have for more than two hundred years been principally fed by potatoes, which were introduced into their country late in the sixteenth, or early in the seventeenth century.[82] Now, the peculiarity of the potato is, that until the appearance of the late disease, it was and perhaps still is, cheaper than any other food equally wholesome. If we compare its reproductive power with the amount of nutriment contained in it, we find that one acre of average land sown with potatoes will support twice as many persons as the same quantity of land sown with wheat.[83] The consequence is, that in a country where men live on potatoes, the population will, if other things are tolerably equal, increase twice as fast as in a country where they live on wheat. And so it has actually occurred. Until a very few years ago, when the face of affairs was entirely altered by pestilence and emigration, the population of Ireland was, in round numbers, increasing annually three per cent.; the population of England during the same period increasing one and a half per cent.[84] The result was, that in these two countries the distribution of wealth was altogether different. Even in England the growth of population is somewhat too rapid; and the labour-market being overstocked, the working classes are not sufficiently paid for their labour.[85] But their condition is one of sumptuous splendour, compared to that in which only a few years ago the Irish were forced to live. The misery in which they were plunged has no doubt always been aggravated by the ignorance of their rulers, and by that scandalous misgovernment which, until very recently, formed one of the darkest blots on the glory of England. The most active cause, however, was, that their wages were so low as to debar them, not only from the comforts, but from the common decencies of civilized life; and this evil condition was the natural result of that cheap and abundant food, which encouraged the people to so rapid an increase, that the labour-market was constantly gorged.[86] So far was this carried, that an intelligent observer who

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[82] Meyen (*Geography of Plants*, 1846, p. 313) says that the potato was introduced into Ireland in 1586; but according to Mr. M'Culloch (*Dictionary of Commerce*, 1849, p. 1048), 'potatoes, it is commonly thought, were not introduced into Ireland till 1610, when a small quantity was sent by Sir Walter Raleigh to be planted in a garden on his estate in the vicinity of Youghall.' Compare *Loudon's Encyclop. of Agriculture*, p. 845: 'first planted by Sir Walter Raleigh on his estate of Youghall, near Cork.'

[83] Adam Smith (*Wealth of Nations*, book i. chap. xi. p. 67) supposes that it will support three times as many; but the statistics of this great writer are the weakest part of his work, and the more careful calculations made since he wrote bear out the statement in the text. 'It admits of demonstration that an acre of potatoes will feed double the number of people that can be fed from an acre of wheat.' *Loudon's Encyclop. of Agriculture*, 5th edit. 1844, p. 845. So, too, in *M'Culloch's Dict.* p. 1048, 'an acre of potatoes will feed double the number of individuals that can be fed from an acre of wheat.' The daily average consumption of an able-bodied labourer in Ireland is estimated at nine and a half pounds of potatoes for men, and seven and a half for women. See *Phillips on Scrofula*, 1846, p. 177.

[84] *Malthus*, *Essay on Population*, vol. i. pp. 424, 425, 431, 435, 441, 442; *M'Culloch's Political Economy*, pp. 381, 382.

[85] The lowest agricultural wages in our time have been in England about 1*s.* a day; while from the evidence collected by Mr. Thornton in 1845, the highest wages then paid were in Lincolnshire, and were rather more than 13*s.* a week; those in Yorkshire and Northumberland being nearly as high. *Thornton on Over-Population*, pp. 12–15, 24, 25. Godwin, writing in 1820, estimates the average at 1*s.* 6*d.* a day. *Godwin on Population*, p. 574. Mr. Phillips, in his work *On Scrofula*, 1846, p. 345, says, 'at present the ratio of wages is from 9*s.* to 10*s.*'

[86] The most miserable part, namely Connaught, in 1733, contained 242,160 inhabitants; and in 1821, 1,110,229. See *Sadler's Law of Population*, vol. ii. p. 490.

travelled through Ireland twenty years ago, mentioned that at that time the average wages were fourpence a day, and that even this wretched pittance could not always be relied upon for regular employment.[87]

Such have been the consequences of cheap food in a country which, on the whole, possesses greater natural resources than any other in Europe.[88] And if we investigate on a larger scale the social and economical condition of nations, we shall see the same principle everywhere at work. We shall see that, other things remaining equal, the food of a people determines the increase of their numbers, and the increase of their numbers determines the rate of their wages. We shall moreover find, that when the wages are invariably low,[89] the distribution of wealth being thus very unequal, the distribution of political power and social influence will also be very unequal; in other words, it will appear that the normal and average relation between the upper and lower classes will, in its origin, depend upon those peculiarities of nature, the operations of which I have endeavoured to indicate.[90] After putting all these things together, we shall, I trust, be able to discern, with a clearness hitherto unknown, the intimate connexion between the physical and moral world; the laws by which that connexion is governed; and the reasons why so many ancient civilizations reached a certain stage of development, and then fell away, unable to resist the pressure of nature, or make head against those external obstacles by which their progress was effectually retarded.

If, in the first place, we turn to Asia, we shall see an admirable illustration of what may be called the collision between internal and external phenomena. Owing to circumstances already stated, Asiatic civilization has always been confined to that rich tract where alone wealth could be easily

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[87] Mr. Inglis, who in 1834 travelled through Ireland with a particular view to its economical state, says, as the result of very careful inquiries, 'I am quite confident, that if the whole yearly earnings of the labourers of Ireland were divided by the whole number of labourers, the result would be under this sum —*Fourpence* a day for the labourers of Ireland.' *Inglis*, *Journey throughout Ireland in 1834*, Lond. 1835, 2nd edit. vol. ii. p. 300. At Balinasloe, in the county of Galway, 'A gentleman with whom I was accidentally in company offered to procure, on an hour's warning, a couple of hundred labourers at fourpence even for temporary employment.' *Inglis*, vol. ii. p. 17. The same writer says (vol. i. p. 263), that at Tralee 'it often happens that the labourers, after working in the canal from five in the morning until eleven in the forenoon, are discharged for the day with the pittance of twopence.' Compare, in *Cloncurry's Recollections*, Dublin, 1849, p. 310, a letter from Dr. Doyle written in 1829, describing Ireland as 'a country where the market is always overstocked with labour, and in which a man's labour is not worth, at an average, more than threepence a day.'

[88] It is singular that so acute a thinker as Mr. Kay should, in his otherwise just remarks on the Irish, entirely overlook the effect produced on their wages by the increase of population. *Kay's Social Condition of the People*, vol. i. pp. 8, 9, 92, 223, 306–324. This is the more observable, because the disadvantages of cheap food have been noticed not only by several common writers, but by the highest of all authorities on population, Mr. Malthus: see the sixth edition of his *Essay on Population*, vol. i. p. 469, vol. ii. pp. 123, 124, 383, 384. If these things were oftener considered, we should not hear so much about the idleness and levity of the Celtic race; the simple fact being, that the Irish are unwilling to work, not because they are Celts, but because their work is badly paid. When they go abroad, they get good wages, and therefore they become as industrious as any other people. Compare *Journal of Statistical Society*, vol. vii. p. 24, with *Thornton on Over-Population*, p. 425; a very valuable work. Even in 1799, it was observed that the Irish as soon as they left their own country became industrious and energetic. See *Parliamentary History*, vol. xxxiv. p. 222. So, too, in North America, 'they are most willing to work hard.' *Lyell's Second Visit to the United States*, 1849, vol. i. p. 187.

[89] By low wages, I mean low reward of labour, which is of course independent both of the cost of labour and of the money-rate of wages.

[90] In a recent work of considerable ingenuity (*Doubleday's True Law of Population*, 1847, pp. 25–29, 69, 78, 123, 124, &c.) it is noticed that countries are more populous when the ordinary food is vegetable than when it is animal; and an attempt is made to explain this on the ground that a poor diet is more favourable to fecundity than a rich one. But though the fact of the greater increase of population is indisputable, there are several reasons for being dissatisfied with Mr. Doubleday's explanation.1st. That the power of propagation is heightened by poor living, is a proposition which has never been established physiologically; while the observations of travellers and of governments are not sufficiently numerous to establish it statistically.2nd. Vegetable diet is as generous for a hot country as animal diet is for a cold country; and since we know that, notwithstanding the difference of food and climate, the temperature of the body varies little between the equator and the poles (compare *Liebig's Animal Chemistry*, p. 19; *Holland's Medical Notes*, p. 473; *Pouillet*, *Elémens de Physique*, vol. i. part i. p. 414; *Burdach's Traité de Physiologie*, vol. ix. p. 663), we have no reason to believe that there is any other normal variation, but should rather suppose that, in regard to all essential functions, vegetable diet and external heat are equivalent to animal diet and external cold.3rd. Even conceding, for the sake of argument, that vegetable food increases the procreative power, this would only affect the number of births, and not the density of population; for a greater number of births may be, and often are, remedied by a greater mortality; a point in regard to which Godwin, in trying to refute Malthus, falls into serious error. *Godwin on Population*, p. 317.Since writing the above, I have found that these views of Mr. Doubleday's were in a great measure anticipated by Fourier. See *Rey*, *Science Sociale*; vol. i. p. 185.

obtained. This immense zone comprises some of the most fertile parts of the globe; and of all its provinces, Hindostan is certainly the one which for the longest period has possessed the greatest civilization.[91] And as the materials for forming an opinion respecting India are more ample than those respecting any other part of Asia,[92] I purpose to select it as an example, and use it to illustrate those laws which, though generalized from political economy, chemistry, and physiology, may be verified by that more extensive survey, the means of which history alone can supply.

In India, the great heat of the climate brings into play that law already pointed out, by virtue of which the ordinary food is of an oxygenous rather than of a carbonaceous character. This, according to another law, obliges the people to derive their usual diet not from the animal, but from the vegetable world, of which starch is the most important constituent. At the same time the high temperature, incapacitating men for arduous labour, makes necessary a food of which the returns will be abundant, and which will contain much nutriment in a comparatively small space. Here, then, we have some characteristics, which, if the preceding views are correct, ought to be found in the ordinary food of the Indian nations. So they all are. From the earliest period the most general food in India has been rice,[93] which is the most nutritive of all the cerealia;[94] which contains an enormous proportion of starch;[95] and which yields to the labourer an average return of at least sixty fold.[96]

Thus possible is it, by the application of a few physical laws, to anticipate what the national food of a country will be, and therefore to anticipate a long train of ulterior consequences. What in this case is no less remarkable, is that though in the south of the peninsula, rice is not so much used as formerly, it has been replaced, not by animal food, but by another grain called ragi.[97] The original rice, however, is so suited to the circumstances I have described, that it is still the most general food of nearly all the hottest countries of Asia,[98] from which at different times it has been transplanted to other parts of the world.[99]

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[91] I use the word 'Hindostan' in the popular sense, as extending south to Cape Comorin; though, properly speaking, it only includes the country north of the Nerbudda. Compare *Mill's History of India*, vol. ii. p. 178; *Bohlen*, *das alte Indien*, vol. i. p. 11; *Meiners über die Länder in Asien*, vol. i. p. 224. The word itself is not found in the old Sanscrit, and is of Persian origin. *Halhed's Preface to the Gentoo Laws*, pp. xx. xxi.; *Asiatic Researches*, vol. iii. pp. 368, 369.

[92] So that, in addition to works published on their philosophy, religion, and jurisprudence, a learned geographer stated several years ago, that 'kein anderes Asiatisches Reich ist in den letzten drey Jahrhunderten von so vielen und so einsichtsvollen Europäern durchreist und beschrieben worden, als Hindostan.' *Meiners*, *Länder in Asien*, vol. i. p. 225. Since the time of Meiners, such evidence has become still more precise and extensive; and is, I think, too much neglected by M. Rhode in his valuable work on India: 'Dem Zwecke dieser Arbeit gemäss, betrachten wir hier nur Werke der Hindus selbst, oder Auszüge aus denselben als Quellen.' *Rhode*, *Religiöse Bildung der Hindus*, vol. i. p. 43.

[93] This is evident from the frequent and familiar mention of it in that remarkable relic of antiquity, the Institutes of Menu. See the *Institutes*, in *Works of Sir W. Jones*, vol. iii. pp. 87, 132, 156, 200, 215, 366, 400, 403, 434. Thus too, in the enumeration of Foods in *Vishnu Purana*, pp. 46, 47, rice is the first mentioned. See further evidence in *Bohlen*, *das alte Indien*, vol. i. p. 22, vol. ii. pp. 159, 160; *Wilson's Theatre of the Hindus*, vol. i. part ii. pp. 15, 16, 37, 92, 95, vol. ii. part ii. p. 35, part iii. p. 64; *Notes on the Ma-habharata*, in *Journal of Asiatic Society*, vol. vii. p. 141; *Travels of Ibn Batuta in Fourteenth Century*, p. 164; *Colebrooke's Digest of Hindu Law*, vol. i. p. 499, vol. ii. pp. 44, 48, 436, 569, vol. iii. pp. 11, 148, 205, 206, 207, 266, 364, 530; *Asiatic Researches*, vol. vii. pp. 299, 302; *Ward on the Hindoos*, vol. i. p. 209, vol. iii. p. 105.

[94] 'It contains a greater proportion of nutritious matter than any of the cerealia.' *Somerville's Physical Geography*, vol. ii. p. 220.

[95] It contains from 83.8 to 85.07 percent of starch. *Brande's Chemistry*, vol. ii. p. 1624; *Thomson's Chemistry of Organic Bodies*, p. 883.

[96] It is difficult to collect sufficient evidence to strike an average; but in Egypt, according to Savary, rice 'produces eighty bushels for one.' *Loudon's Encyclop. of Agriculture*, p. 173. In Tennasserim, the yield is from 80 to 100. *Low's History of Tennasserim*, in *Journal of Asiatic Society*, vol. iii. p. 29. In South America, 250 fold, according to Spix and Martius (*Travels in Brazil*, vol. ii. p. 79); or from 200 to 300, according to Southey (*History of Brazil*, vol. iii. pp. 658, 806). The lowest estimate given by M. Meyen is forty fold; the highest, which is marsh rice in the Philippine Islands, 400 fold. *Meyen's Geography of Plants*, 1846, p. 301.

[97] *Elphinstone's History of India*, p. 7. Ragi is the Cynosurus Corocanus of Linnæus; and, considering its importance, it has been strangely neglected by botanical writers. The best account I have seen of it is in *Buchanan's Journey through the Countries of Mysore, Canara, and Malabar*, vol. i. pp. 100–104, 285, 286, 375, 376, 403, vol. ii. pp. 103, 104, vol. iii. pp. 239, 240, 296, 297. In the large cities, millet is generally used; of which 'a quantity sufficient for two meals may be purchased for about a halfpenny.' *Gibson on Indian Agriculture*, in *Journal of Asiatic Society*, vol. viii. p. 100.

[98] *Marsden's History of Sumatra*, pp. 56, 59; *Raffles' History of Java*, vol. i. pp. 39, 106, 119, 129, 240; *Percival's Ceylon*, pp. 337, 364; *Transac. of Society of Bombay*, vol. ii. p. 155; *Transac. of Asiatic Society*, vol. i. p. 510; *Journal of Asiatic Society*, vol. i. pp. 228,

In consequence of these peculiarities of climate, and of food, there has arisen in India that unequal distribution of wealth which we must expect to find in countries where the labour-market is always redundant.[100] If we examine the earliest Indian records which have been preserved – records between two and three thousand years old – we find evidence of a state of things similar to that which now exists, and which, we may rely upon it, always has existed ever since the accumulation of capital once fairly began. We find the upper classes enormously rich, and the lower classes miserably poor. We find those by whose labour the wealth is created, receiving the smallest possible share of it; the remainder being absorbed by the higher ranks in the form either of rent or of profit. And as wealth is, after intellect, the most permanent source of power, it has naturally happened that a great inequality of wealth has been accompanied by a corresponding inequality of social and political power. It is not, therefore, surprising that from the earliest period to which our knowledge of India extends, an immense majority of the people, pinched by the most galling poverty, and just living from hand to mouth, should always have remained in a state of stupid debasement, broken by incessant misfortune, crouching before their superiors in abject submission, and only fit either to be slaves themselves or to be led to battle to make slaves of others.[101]

To ascertain the precise value of the average rate of wages in India for any long period, is impossible; because, although the amount might be expressed in money, still the value of money, that is, its purchasing power, is subject to incalculable fluctuations, arising from changes in the cost of production.[102] But, for our present purpose, there is a method of investigation which will lead to results far more accurate than any statement could be that depended merely on a collection of evidence respecting the wages themselves. The method is simply this: that inasmuch as the wealth of a country can only be divided into wages, rent, profits, and interest, and inasmuch as interest is on an average an exact measure of profits,[103] it follows that if among any people rent and interest are both high, wages must be low.[104] If, therefore, we can ascertain the current interest of money, and

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247, vol. ii. pp. 44, 64, 251, 257, 262, 336, 344, vol. iii. pp. 8, 25, 300, 340, vol. iv. pp. 82, 83, 104, vol. v. pp. 241, 246; *Asiatic Researches*, vol. v. pp. 124, 229, vol. xii. p. 148, vol. xvi. pp. 171, 172; *Journal of Geograph. Society*, vol. ii. p. 86, vol. iii. pp. 124, 295, 300, vol. v. p. 263, vol. viii. pp. 341, 359, vol. xix. pp. 132, 137.

[99] Rice, so far as I have been able to trace it, has travelled westward. Besides the historical evidence, there are philological probabilities in favour of its being indigenous to Asia, and the Sanscrit name for it has been very widely diffused. Compare *Humboldt's Cosmos*, vol. ii. p. 472, with *Crawfurd's History of the Indian Archipelago*, vol. i. p. 358. In the fourteenth century, it was the common food on the Zanguebar Coast; and is now universal in Madagascar. *Travels of Ibn Batuta in Fourteenth Century*, p. 56; *Ellis's History of Madagascar*, vol. i. pp. 39, 297–304, vol. ii. p. 292; *Journal of Geograph. Society*, vol. iii. p. 212. From Madagascar its seeds were, according to *M'Culloch's Dictionary of Commerce*, p. 1105, carried to Carolina late in the seventeenth century. It is now cultivated in Nicaragua (*Squier's Central America*, vol. i. p. 38) and in South America (*Henderson's Hist. of Brazil*, pp. 292, 307, 395, 440, 488), where it is said to grow wild. Compare *Meyen's Geography of Plants*, pp. 291, 297, with *Azara*, *Voyages dans l'Amérique Méridionale*, vol. i. p. 100, vol. ii. p. 80. The ancient Greeks, though acquainted with rice, did not cultivate it; and its cultivation was first introduced into Europe by the Arabs. See *Humboldt*, *Nouvelle Espagne*, vol. ii. pp. 409, 410.

[100] So far as food is concerned, Diodorus Siculus notices the remarkable fertility of India, and the consequent accumulation of wealth. See two interesting passages in *Bibliothec. Hist.* lib. ii. vol. ii. pp. 49, 50, 108, 109. But of the economical laws of distribution he, like all the ancient writers, was perfectly ignorant.

[101] An able and very learned apologist for this miserable people says, 'The servility so generally ascribed to the Hindu is never more conspicuous than when he is examined as an evidence. But if it be admitted that he acts as a slave, why blame him for not possessing the virtues of a free man? *The oppression of ages has taught him implicit submission.*' *Vans Kennedy*, in *Transactions of the Society of Bombay*, vol. iii. p. 144. Compare the observations of Charles Hamilton in *Asiatic Researches*, vol. i. p. 305.

[102] The impossibility of having a standard of value, is clearly pointed out in *Turgot's Réflexions sur la Formation et la Distribution des Richesses*, in *Œuvres*, vol. v. pp. 51, 52. Compare *Ricardo's Works*, pp. 11, 28–30, 46, 166, 253, 270, 401, with *M'Culloch's Principles of Political Economy*, pp. 298, 299, 307.

[103] *Smith's Wealth of Nations*, book i. chap. ix. p. 37; where, however, the proposition is stated rather too absolutely, since the risks arising from an insecure state of society must be taken into consideration. But that there is an average ratio between interest and profits is obvious, and is distinctly laid down by the Sanscrit jurists. See *Colebrooke's Digest of Hindu Law*, vol. i. pp. 72, 81.

[104] Ricardo (*Principles of Political Economy*, chap. vi. in *Works*, p. 65) says, 'whatever increases wages, necessarily reduces profits.' And in chap. xv. p. 122, 'whatever raises the wages of labour, lowers the profits of stock.' In several other places he makes the same assertion, very much to the discomfort of the ordinary reader, who knows that in the United States, for instance, wages and profits are both high. But the ambiguity is in the language, not in the thought; and in these and similar passages Ricardo by wages meant cost of labour, in which sense the proposition is quite accurate. If by wages we mean the reward of labour, then there is no relation between

the proportion of the produce of the soil which is absorbed by rent, we shall get a perfectly accurate idea of the wages; because wages are the residue, that is, they are what is left to the labourers after rent, profits, and interest have been paid.

Now it is remarkable, that in India both interest and rent have always been very high. In the *Institutes of Menu*, which were drawn up about b. c. 900,[105] the lowest legal interest for money is fixed at fifteen per cent., the highest at sixty per cent.[106] Nor is this to be considered as a mere ancient law now fallen into disuse. So far from that, the *Institutes of Menu* are still the basis of Indian jurisprudence;[107] and we know on very good authority, that in 1810 the interest paid for the use of money varied from thirty-six to sixty per cent.[108]

Thus much as to one of the elements of our present calculation. As to the other element, namely, the rent, we have information equally precise and trustworthy. In England and Scotland, the rent paid by the cultivator for the use of land is estimated in round numbers, taking one farm with another, at a fourth of the gross produce.[109] In France, the average proportion is about a third;[110] while in the United States of North America it is well known to be much less, and, indeed, in some parts, to be merely nominal.[111] But in India the legal rent, that is, the lowest rate recognized by the law and usage of the country, is one-half of the produce; and even this cruel regulation is not strictly enforced, since in many cases rents are raised so high, that the cultivator not only receives less than half the produce, but receives so little as to have scarcely the means of providing seed to sow the ground for the next harvest.[112]

The conclusion to be drawn from these facts is manifest. Rent and interest being always very high, and interest varying, as it must do, according to the rate of profits, it is evident that wages must have been very low; for since there was in India a specific amount of wealth to be divided into rent, interest, profits, and wages, it is clear that the first three could only have been increased at the

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wages and profits; for when rent is low, both of them may be high, as is the case in the United States. That this was the view of Ricardo is evident from the following passage: 'Profits, it cannot be too often repeated, depend on wages; not on nominal but real wages; not on the number of pounds that may be annually paid to the labourer, but on the number of days' work necessary to obtain those pounds.' *Political Economy*, chap. vii., *Ricardo's Works*, p. 82. Compare *Mill's Principles of Political Economy*, vol. i. p. 509, vol. ii. p. 225.

[105] I take the estimate of Mr. Elphinstone (*History of India*, pp. 225–228) as midway between Sir William Jones (*Works*, vol. iii. p. 56) and Mr. Wilson (*Rig Veda Sanhita*, vol. i. p. xlvii.).

[106] *Institutes of Menu*, chap. viii. sec. 140–142, in *Works of Sir W. Jones*, vol. iii. p. 295. The subsequent Sanscrit commentators recognize nearly the same rate of interest, the minimum being fifteen per cent. See *Colebrooke's Digest of Hindu Law*, vol. i. pp. 29, 36, 43, 98, 99, 237, vol. ii. p. 70.

[107] In *Colebrooke's Digest*, vol. i. p. 454, and vol. iii. p. 229, Menu is called 'the highest authority of memorial law,' and 'the founder of memorial law.' The most recent historian of India, Mr. Elphinstone, says (*Hist. of India*, p. 83) 'the code of Menu is still the basis of the Hindu jurisprudence; and the principal features remain unaltered to the present day.' This remarkable code is also the basis of the laws of the Burmese, and even of those of the Laos. *Journal of the Asiatic Society*, vol. ii. p. 271, vol. iii. pp. 28, 296, 332, vol. v. p. 252.

[108] See, in *Mill's History of India*, vol. i. p. 317, the report of a committee of the House of Commons in 1810, in which it is stated that the ryots paid 'the heavy interest of three, four, and five per cent. per month.' Ward, writing about the same time, mentions as much as seventy-five per cent. being given, and this apparently without the lender incurring any extraordinary risk. *Ward on the Hindoos*, vol. ii. p. 190.

[109] Compare the table in *Loudon's Encyclopædia of Agriculture*, p. 778, with *Mavor's note in Tusser's Five Hundred Points of Husbandry*, p. 195, Lond. 1812, and *M'Culloch's Statistical Account of the British Empire*, 1847, vol. i. p. 560.

[110] This is the estimate I have received from persons well acquainted with French agriculture. The rent, of course, varies in each separate instance, according to the natural powers of the soil, according to the extent to which those powers have been improved, and according to the facilities for bringing the produce to market. But, notwithstanding these variations, there must be in every country an average rent, depending upon the operation of general causes.

[111] Owing to the immense supply of land preventing the necessity of cultivating those inferior soils which older countries are glad to use, and are therefore willing to pay a rent for the right of using. In the United States, profits and wages (i.e. the reward of the labourer, not the cost of labour) are both high, which would be impossible if rent were also high.

[112] See *Rammohun Roy on the Judicial and Revenue Systems of India*, 1832, pp. 59–61, 63, 69, 92, 94. At p. 69, this high authority says of the agricultural peasantry of Bengal: 'In an abundant season, when the price of corn is low, the sale of their whole crops is required to meet the demands of the landholder, leaving little or nothing for seed or subsistence to the labourer or his family.' In Cashmere, the sovereign received half the produce of the rice-crop, leaving the other half to the cultivator. *Moorcroft's Notices of Cashmere*, in *Journal of Geog. Society*, vol. ii. p. 266.

expense of the fourth; which is saying, in other words, that the reward of the labourers was very small in proportion to the reward received by the upper classes. And though this, being an inevitable inference, does not require extraneous support, it may be mentioned that in modern times, for which alone we have direct evidence, wages have in India always been excessively low, and the people have been, and still are, obliged to work for a sum barely sufficient to meet the exigencies of life.[113]

This was the first great consequence induced in India by the cheapness and abundance of the national food.[114] But the evil by no means stopped there. In India, as in every other country, poverty provokes contempt, and wealth produces power. When other things are equal, it must be with classes of men as with individuals, that the richer they are, the greater the influence they will possess. It was therefore to be expected, that the unequal distribution of wealth should cause an unequal distribution of power; and as there is no instance on record of any class possessing power without abusing it, we may easily understand how it was that the people of India, condemned to poverty by the physical laws of their climate, should have fallen into a degradation from which they have never been able to escape. A few instances may be given to illustrate, rather than to prove, a principle which the preceding arguments have, I trust, placed beyond the possibility of dispute.

To the great body of the Indian people the name of Sudras is given;[115] and the native laws respecting them contain some minute and curious provisions. If a member of this despised class presumed to occupy the same seat as his superiors, he was either to be exiled or to suffer a painful and ignominious punishment.[116] If he spoke of them with contempt, his mouth was to be burned;[117] if he actually insulted them, his tongue was to be slit;[118] if he molested a Brahmin, he was to be put

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[113] Heber (*Journey through India*, vol. i. pp. 209, 356, 357, 359) gives some curious instances of the extremely low rate at which the natives are glad to work. As to the ordinary wages in India in the present century, see *Journal of Asiatic Society*, vol. i. p. 255, vol. v. p. 171; *Rammohun Roy on the Judicial and Revenue Systems*, pp. 105, 106; *Sykes's Statistics of the Deccan Reports of the British Association*, vol. vi. p. 321; *Ward's View of the Hindoos*, vol. iii. p. 207; *Colebrooke's Digest of Hindu Law*, vol. ii. p. 184. On wages in the south of India, the fullest information will be found in Buchanan's valuable work, *Journey through the Mysore, Canara, and Malabar*, vol. i. pp. 124, 125, 133, 171, 175, 216, 217, 298, 390, 415, vol. ii. pp. 12, 19, 22, 37, 90, 108, 132, 217, 218, 315, 481, 523, 525, 562, vol. iii. pp. 35, 181, 226, 298, 321, 349, 363, 398, 428, 555. I wish that all travellers were equally minute in recording the wages of labour; a subject of far greater importance than those with which they usually fill their books.On the other hand, the riches possessed by the upper classes have, owing to this mal-distribution of wealth, been always enormous, and sometimes incredible. See *Forbes's Oriental Memoirs*, vol. ii. p. 297; *Bohlen*, *das alte Indien*, vol. ii. p. 119; *Travels of Ibn Batuta*, p. 41; *Ward's Hindoos*, vol. iii. p. 178. The autobiography of the Emperor Jehangueir contains such extraordinary statements of his immense wealth, that the Editor, Major Price, thinks that some error must have been made by the copyist; but the reader will find in *Grote's History of Greece* (vol. xii. pp. 229, 245) evidence of the treasures which it was possible for Asiatic rulers to collect in that state of society. The working of this unequal distribution is thus stated by Mr. Glyn (*Transac. of Asiatic Society*, vol. i. p. 482): 'The nations of Europe have very little idea of the actual condition of the inhabitants of Hindustan; they are more wretchedly poor than we have any notion of. Europeans have hitherto been too apt to draw their opinions of the wealth of Hindustan from the gorgeous pomp of a few emperors, sultans, nawabs, and rajahs; whereas a more intimate and accurate view of the real state of society would have shown that these princes and nobles were engrossing all the wealth of the country, whilst the great body of the people were earning but a bare subsistence, groaning under intolerable burdens, and hardly able to supply themselves with the necessaries of life, much less with its luxuries.'

[114] Turner, who travelled in 1783 through the north-east of Bengal, says: 'Indeed, the extreme poverty and wretchedness of these people will forcibly appear, when we recollect how little is necessary for the subsistence of a peasant in these regions. The value of this can seldom amount to more than one penny per day, even allowing him to make his meal of two pounds of boiled rice, with a due proportion of salt, oil, vegetables, fish, and chili.' *Turner's Embassy to Tibet*, p. 11. Ibn Batuta, who travelled in Hindostan in the fourteenth century, says: 'I never saw a country in which provisions were so cheap.' *Travels of Ibn Batuta*, p. 194.

[115] The Sudras are estimated by Ward (*View of the Hindoos*, vol. iii. p. 281) at 'three-fourths of the Hindoos.' At all events, they comprise the whole of the working classes; the Vaisyas not being husbandmen, as they are often called, but landlords, owners of cattle, and traders. Compare *Institutes of Menu*, chap. ix. sec. 326–333, in *Works of Sir W. Jones*, vol. iii. pp. 380, 381, with *Colebrooke's Digest*, vol. i. p. 15, from which it appears that the Vaisyas were always the masters, and that the Sudra was to 'rely on agriculture for his subsistence.' The division, therefore, between 'the industrious and the servile' (*Elphinstone's History of India*, p. 12) is too broadly stated, and we must, I think, take the definition of M. Rhode: 'Die Kaste der Sudras umfasst die ganze arbeitende, oder um Lohn dienende Classe des Volks.' *Relig. Bildung der Hindus*, vol. ii. p. 561.

[116] 'Either be banished with a mark on his hinder parts, or the king shall cause a gash to be made on his buttock.' *Institutes of Menu*, chap. viii. sec. 281, in *Works of Sir W. Jones*, vol. iii. p. 315. See also *Ward's View of the Hindoos*, vol. iii. p. 67.

[117] *Menu*, chap. viii. sec. 271, in *Jones's Works*, vol. iii. p. 314.

[118] *Menu*, chap. viii. sec. 270.

to death;[119] if he sat on the same carpet with a Brahmin, he was to be maimed for life;[120] if, moved by the desire of instruction, he even listened to the reading of the sacred books, burning oil was to be poured into his ears;[121] if, however, he committed them to memory, he was to be killed;[122] if he were guilty of a crime, the punishment for it was greater than that inflicted on his superiors;[123] but if he himself were murdered, the penalty was the same as for killing a dog, a cat, or a crow.[124] Should he marry his daughter to a Brahmin, no retribution that could be exacted in this world was sufficient; it was therefore announced that the Brahmin must go to hell, for having suffered contamination from a woman immeasurably his inferior.[125] Indeed, it was ordered that the mere name of a labourer should be expressive of contempt, so that his proper standing might be immediately known.[126] And lest this should not be enough to maintain the subordination of society, a law was actually made forbidding any labourer to accumulate wealth;[127] while another clause declared, that even though his master should give him freedom, he would in reality still be a slave; 'for,' says the lawgiver – 'for of a state which is natural to him, by whom can he be divested?'[128]

By whom, indeed, could he be divested? I ween not where that power was by which so vast a miracle could be worked. For in India, slavery, abject, eternal slavery, was the natural state of the great body of the people; it was the state to which they were doomed by physical laws utterly impossible to resist. The energy of those laws is, in truth, so invincible, that wherever they have come into play, they have kept the productive classes in perpetual subjection. There is no instance on record of any tropical country, in which wealth having been extensively accumulated, the people have escaped their fate; no instance in which the heat of the climate has not caused an abundance of food, and the abundance of food caused an unequal distribution, first of wealth, and then of political and social power. Among nations subjected to these conditions, the people have counted for nothing; they have had no voice in the management of the state, no control over the wealth their own industry created. Their only business has been to labour; their only duty to obey. Thus there has been generated among them, those habits of tame and servile submission, by which, as we know from history, they have always been characterized. For it is an undoubted fact, that their annals furnish no instance of their having turned upon their rulers, no war of classes, no popular insurrections, not even one great popular conspiracy. In those rich and fertile countries there have been many changes, but all of

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[119] 'If a Sudra gives much and frequent molestation to a Brahmin, the magistrate shall put him to death.' *Halhed's Code of Gentoo Laws*, p. 262.

[120] *Halhed's Code of Gentoo Laws*, p. 207. As to the case of striking a Brahmin, see *Rammohun Roy on the Veds*, p. 227, 2nd edit. 1832.

[121] 'And if a Sooder listens to the Beids of the Shaster, then the oil, heated as before, shall be poured into his ears; and arzeez and wax shall be melted together, and the orifice of his ears shall be stopped up therewith.' *Halhed*, p. 262. Compare the prohibition in *Menu*, chap. iv. sec. 99, chap. x. sec. 109–111, in *Jones's Works*, vol. iii. pp. 174, 398.

[122] *Halhed*, p. 262: 'the magistrate shall put him to death.' In Mrichchakati, the judge says to a Sudra, 'If you expound the Vedas, will not your tongue be cut out?' *Wilson's Theatre of the Hindus*, vol. i. part ii. p. 170.

[123] *Ward's View of the Hindoos*, vol. iv. p. 308. To this the only exception was in the case of theft. *Mill's History of India*, vol. i. pp. 193, 260. A Brahmin could 'on no account be capitally punished.' *Asiatic Researches*, vol. xv. p. 44.

[124] *Menu*, chap. xi. sec. 132, in *Works of Sir W. Jones*, vol. iii. p. 422.

[125] 'A Brahmin, if he take a Sudra to his bed as his first wife, sinks to the regions of torment.' *Institutes of Menu*, chap. iii. sec. 17, in *Jones*, vol. iii. p. 121. Compare the denial of funeral rites, in *Colebrooke's Digest of Hindu Law*, vol. iii. p. 328. And on the different hells invented by the Hindu clergy, see *Vishnu Purana*, p. 207; *Ward's View of the Hindoos*, vol. ii. pp. 182, 183; *Coleman's Mythology of the Hindus*, p. 113. The curious details in *Rhode*, *die Religiöse Bildung der Hindus*, vol. i. pp. 392, 393, rather refer to Buddhism, and should be compared with *Journal Asiatique*, I. série, vol. viii. pp. 80, 81, Paris, 1826.

[126] *Menu*, chap. ii. sec. 31, in *Jones*, vol. iii. p. 87; also noticed in *Rhode*, *Relig. Bildung*, vol. ii. p. 561: 'sein Name soll schon Verachtung ausdrücken.' So, too, Mr. Elphinstone (*History of India*, p. 17): 'the proper name of a Sudra is directed to be expressive of contempt.' Compare *Origines du Droit*, in *Œuvres de Michelet*, vol. ii. p. 387, Bruxelles, 1840.

[127] *Menu*, chap. x. sec. 129, in *Jones*, vol. iii. p. 401. This law is pointed out by Mill (*History of India*, vol. i. p. 195) as an evidence of the miserable state of the people, which, Mr. Wilson (note in p. 213) vainly attempts to evade.

[128] 'A Sudra, though emancipated by his master, is not released from a state of servitude; for of a state which is natural to him, by whom can he be divested?' *Institutes of Menu*, chap. viii. sec. 414, in *Works of Sir W. Jones*, vol. iii. p. 333.

them have been from above, not from below. The democratic element has been altogether wanting. There have been in abundance, wars of kings, and wars of dynasties. There have been revolutions in the government, revolutions in the palace, revolutions on the throne; but no revolutions among the people;[129] no mitigation of that hard lot which nature, rather than man, assigned to them. Nor was it until civilization arose in Europe, that other physical laws came into operation, and therefore other results were produced. In Europe, for the first time, there was some approach to equality, some tendency to correct that enormous disproportion of wealth and power, which formed the essential weakness of the greatest of the more ancient countries. As a natural consequence, it is in Europe that everything worthy of the name of civilization has originated; because there alone have attempts been made to preserve the balance of its relative parts. There alone has society been organized according to a scheme, not indeed sufficiently large, but still wide enough to include all the different classes of which it is composed, and thus, by leaving room for the progress of each, to secure the permanence and advancement of the whole.

The way in which certain other physical peculiarities confined to Europe, have also accelerated the progress of Man by diminishing his superstition, will be indicated towards the end of this chapter; but as that will involve an examination of some laws which I have not yet noticed, it seems advisable, in the first place, to complete the inquiry now before us; and I therefore purpose proving that the line of argument which has been just applied to India, is likewise applicable to Egypt, to Mexico, and to Peru. For by thus including in a single survey, the most conspicuous civilizations of Asia, Africa, and America, we shall be able to see how the preceding principles hold good of different and distant countries; and we shall be possessed of evidence sufficiently comprehensive to test the accuracy of those great laws which, without such precaution, I might be supposed to have generalized from scanty and imperfect materials.

The reasons why, of all the African nations, the Egyptians alone were civilized, have been already stated, and have been shown to depend on those physical peculiarities which distinguish them from the surrounding countries, and which, by facilitating the acquisition of wealth, not only supplied them with material resources that otherwise they could never have obtained, but also secured to their intellectual classes the leisure and the opportunity of extending the boundaries of knowledge. It is, indeed, true that, notwithstanding these advantages, they effected nothing of much moment; but this was owing to circumstances which will be hereafter explained; and it must, at all events, be admitted that they raised themselves far above every other people by whom Africa was inhabited.

The civilization of Egypt being, like that of India, caused by the fertility of the soil, and the climate being also very hot,[130] there were in both countries brought into play the same laws; and there naturally followed the same results. In both countries we find the national food cheap and abundant: hence the labour-market over-supplied; hence a very unequal division of wealth and power; and hence all the consequences which such inequality will inevitably produce. How this system worked in India, I have just attempted to examine; and although the materials for studying the former condition of Egypt are much less ample, they are still sufficiently numerous to prove the striking analogy between the two civilizations, and the identity of those great principles which regulated the order of their social and political development.

If we inquire into the most important circumstances which concerned the people of ancient Egypt, we shall see that they are exactly the counterpart of those that have been noticed in India. For, in the first place, as regards their ordinary food, what rice is to the most fertile parts of Asia, that

[129] An intelligent observer says, 'It is also remarkable how little the people of Asiatic countries have to do in the revolutions of their governments. They are never guided by any great and common impulse of feeling, and take no part in events the most interesting and important to their country and their own prosperity.' *M'Murdo on the Country of Sindh*, in *Journal of Asiatic Society*, vol. i. p. 250. Compare similar remarks in *Herder's Ideen zur Geschichte*, vol. iii. p. 114; and even in *Alison's History of Europe*, vol. x. pp. 419, 420.

[130] Volney (*Voyage en Egypte*, vol. i. pp. 58–63) has a good chapter on the climate of Egypt.

are dates to Africa. The palm-tree is found in every country from the Tigris to the Atlantic;[131] and it supplies millions of human beings with their daily food in Arabia,[132] and in nearly the whole of Africa north of the equator.[133] In many parts of the great African desert it is indeed unable to bear fruit; but naturally it is a very hardy plant, and produces dates in such profusion, that towards the north of the Sahara they are eaten not only by man, but also by domestic animals.[134] And in Egypt, where the palm is said to be of spontaneous growth,[135] dates, besides being the chief sustenance of the people, are so plentiful, that from a very early period they have been given commonly to camels, the only beasts of burden generally used in that country.[136]

From these facts, it is evident that, taking Egypt as the highest type of African civilization, and India as the highest type of Asiatic civilization, it may be said that dates are to the first civilization what rice is to the second. Now it is observable, that all the most important physical peculiarities found in rice are also found in dates. In regard to their chemistry, it is well known that the chief principle of the nutriment they contain is the same in both; the starch of the Indian vegetable being merely turned into the sugar of the Egyptian. In regard to the laws of climate, their affinity is equally obvious; since dates, like rice, belong to hot countries, and flourish most in or near the tropics.[137] In regard to their increase, and the laws of their connexion with the soil, the analogy is also exact; for dates, just the same as rice, require little labour, and yield abundant returns, while they occupy so small a space of land in comparison with the nutriment they afford, that upwards of two hundred palm-trees are sometimes planted on a single acre.[138]

Thus striking are the similarities to which, in different countries, the same physical conditions naturally give rise. At the same time, in Egypt, as in India, the attainment of civilization was preceded by the possession of a highly fertile soil; so that, while the exuberance of the land regulated the speed with which wealth was created, the abundance of the food regulated the proportions into which the

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[131] It is, however, unknown in South Africa. See the account of the Palmaceæ in *Lindley's Vegetable Kingdom*, 1847, p. 136, and *Meyen's Geog. of Plants*, p. 337.

[132] 'Of all eatables used by the Arabs, dates are the most favourite.' *Burckhardt's Travels in Arabia*, vol. i. p. 56. See also, for proof of their abundance in the west of Arabia, vol. i. pp. 103, 157, 238, vol. ii. pp. 91, 100, 105, 118, 209, 210, 214, 253, 300, 331. And on the dates of Oman and the east of Arabia, see *Wellsted's Travels in Arabia*, vol. i. pp. 188, 189, 236, 276, 290, 349. Compare *Niebuhr*, *Description de l'Arabie*, pp. 142, 296. Indeed, they are so important, that the Arabs have different names for them according to the stages of their growth. Djewhari says, 'La dénomination *balah* précède le nom *bosr*; car la datte se nomme d'abord *tala*, en suite *khalal*, puis *balah*, puis *bosr*, puis *rotab*, et enfin *tamr*." *De Sacy's note to Abd-Allatif, Relation, de l'Egypte*, p. 74, and see p. 118. Other notices of the dates of Arabia will be found in *Travels of Ibn Batuta in Fourteenth Century*, p. 66; *Journal of Asiatic Soc.* vol. viii. p. 286; *Journal of Geograph. Soc.* vol. iv. p. 201, vol. vi. pp. 53, 55, 58, 66, 68, 74, vol. vii. p. 32, vol. ix. pp. 147, 151.

[133] Heeren (*Trade of the African Nations*, vol. i. p. 182) supposes that in Africa, dates are comparatively little known south of 26° north lat. But this learned writer is certainly mistaken; and a reference to the following passages will show that they are common as far down as the parallel of Lake Tchad, which is nearly the southern limit of our knowledge of Central Africa; *Denham's Central Africa*, p. 295; *Clapperton's Journal*, in *Appendix to Denham*, pp. 34, 59; *Clapperton's Second Expedition*, p. 159. Further east they are somewhat scarcer, but are found much more to the south than is supposed by Heeren: see *Pallme's Kordofan*, p. 220.

[134] 'Dates are not only the principal growth of the Fezzan oases, but the main subsistence of their inhabitants. All live on dates; men, women, and children, horses, asses, and camels, and sheep, fowls, and dogs.' *Richardson's Travels in the Sahara*, vol. ii. p. 323, and see vol. i. p. 343: as to those parts of the desert where the palm will not bear, see vol. i. pp. 387, 405, vol. ii. pp. 291, 363. Respecting the dates of western Africa, see *Journal of Geograph. Society*, vol. xii. p. 204.

[135] 'It flourished spontaneously in the valley of the Nile.' *Wilkinson's Ancient Egyptians*, vol. ii. p. 372. As further illustration of the importance to Africa of this beautiful plant, it may be mentioned, that from the high-palm there is prepared a peculiar beverage, which in some parts is in great request. On this, which is called palm-wine, see *M'William's Medical Expedition to the Niger*, pp. 71, 116; *Meredith's Gold Coast of Africa*, 1812, pp. 55, 56; *Laird and Oldfield's Expedition into the Interior of Africa*, 1837, vol. ii. pp. 170, 213; *Bowdich*, *Mission to Ashantee*, pp. 69, 100, 152, 293, 386, 392. But I doubt if this is the same as the palm-wine mentioned in *Balfour's Botany*, 1849, p. 532. Compare *Tuckey's Expedition to the Zaire*, pp. 155, 216, 224, 356.

[136] *Wilkinson's Ancient Egyptians*, vol. ii. pp. 175–178. See also on the abundance of dates, the extracts from an Arabian geographer in *Quatremère*, *Recherches sur l'Egypte*, pp. 220, 221.

[137] On their relation to the laws of climate, see the remarks respecting the geographical limits of their power of ripening, in *Jussieu's Botany*, edit. Wilson, 1849, p. 734.

[138] 'In the valley of the Nile, a feddan (1¾ acre) is sometimes planted with 400 trees.' *Wilkinson's Ancient Egyptians*, vol. ii. p. 178. At Moorzuk an entire date-palm is only worth about a shilling. *Richardson's Central Africa*, vol. i. p. 111.

wealth was divided. The most fertile part of Egypt is the Said;[139] and it is precisely there that we find the greatest display of skill and knowledge, the splendid remains of Thebes, Carnac, Luxor, Dendera, and Edfou.[140] It is also in the Said, or as it is often called the Thebaid, that a food is used which multiplies itself even more rapidly than either dates or rice. This is the dhourra, which until recently was confined to Upper Egypt,[141] and of which the reproductive power is so remarkable, that it yields to the labourer a return of two hundred and forty for one.[142] In Lower Egypt the dhourra was formerly unknown; but, in addition to dates, the people made a sort of bread from the lotos, which sprang spontaneously out of the rich soil of the Nile.[143] This must have been a very cheap and accessible food; while to it there was joined a profusion of other plants and herbs, on which the Egyptians chiefly lived.[144] Indeed so inexhaustible was the supply, that at the time of the Mohammedan invasion there were, in the single city of Alexandria, no less than four thousand persons occupied in selling vegetables to the people.[145]

From this abundance of the national food, there resulted a train of events strictly analogous to those which took place in India. In Africa generally, the growth of population, though on the one hand stimulated by the heat of the climate, was on the other hand checked by the poverty of the soil. But on the banks of the Nile this restraint no longer existed,[146] and therefore the laws already noticed came into uncontrolled operation. By virtue of those laws, the Egyptians were not only satisfied with a cheap food, but they required that food in comparatively small quantities; thus by a double process, increasing the limit to which their numbers could extend. At the same time the lower orders were able to rear their offspring with the greater ease, because, owing to the high rate of temperature, another considerable source of expense was avoided; the heat being such that, even for adults, the necessary clothes were few and slight, while the children of the working classes were entirely naked;

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[139] On the remarkable fertility of the Said, see *Abd-Allatif*, *Relation de l'Egypte*, p. 3.

[140] The superiority of the ruins in Southern Egypt over those in the northern part is noticed by Heeren (*African Nations*, vol. ii. p. 69), and must, indeed, be obvious to whoever has studied the monuments. In the Said the Coptic was preserved longer than in Lower Egypt, and is known to philologists by the name of Misr. See *Quatremère*, *Recherches sur la Langue de l'Egypte*, pp. 20, 41, 42. See also on the Saidic, pp. 134–140, and some good remarks by Dr. Prichard (*Physical Hist.* vol. ii. p. 202); who, however, adopts the paradoxical opinion of Georgi respecting the origin of the language of the Thebaid.

[141] Abd-Allatif (*Relation de l'Egypte*, p. 32) says, that in his time it was only cultivated in the Said. This curious work by Abd-Allatif was written in a. d. 1203. *Relation*, p. 423. Meiners thinks that Herodotus and other ancient writers refer to the dhourra without mentioning it: 'diese Durra muss daher im Herodot wie in andern alten Schriftstellern vorzüglich verstanden werden, wenn von hundert, zwey hundert, und mehrfältigen Früchten, welche die Erde trage, die Rede ist.' *Meiners*, *Fruchtbarkeit der Länder*, vol. i. p. 139. According to Volney, it is the Holcus Arundinaceus of Linnæus, and appears to be similar to millet; and though that accurate traveller distinguishes between them, I observe that Captain Haines, in a recent memoir, speaks of them as being the same. Compare Haines in *Journal of Geog. Soc.* vol. xv. p. 118, with *Volney*, *Voyage en Egypte*, vol. i. p. 195.

[142] 'The return is in general not less than 240 for one; and the average price is about 3*s.* 9*d.* the ardeb, which is scarcely 3*d.* per bushel.' *Hamilton's Æqyptiaca*, p. 420. In Upper Egypt, 'the doura constitutes almost the whole subsistence of the peasantry,' p. 419. At p. 96, Hamilton says, 'I have frequently counted 3,000 grains in one ear of doura, and each stalk has in general four or five ears.' For an account, of the dhourra bread, see *Volney*, *Voyage en Egypte*, vol. i. p. 161.

[143] Ἐπεὰν πλήρης γένηται ὁ ποταμὸς, καὶ τὰ πεδία πελαγίσῃ, φύεται ἐν τῷ ὕδατι κρίνεα πολλὰ, τὰ Αἰγύπτιοι καλέουσι λωτόν· ταῦτα ἐπεὰν δρέψωσι, αὐαίνουσι πρὸς ἥλιον· καὶ ἔπειτα τὸ ἐκ τοῦ μέσου τοῦ λωτοῦ τῇ μήκωνι ἐὸν ἐμφερὲς, πτίσαντες ποιεῦνται ἐξ αὐτοῦ ἄρτους ὀπτοὺς πυρίπυρί. *Herodot.* ii. 92, vol. i. p. 688.

[144] *Wilkinson's Ancient Egyptians*, vol. ii. pp. 370–372, 400, vol. iv. p. 59. Abd-Allatif gives a curious account of the different vegetables grown in Egypt early in the thirteenth century. *Relation*, pp. 16–36, and the notes of De Sacy, pp. 37–134. On the κύαμος of Herodotus there are some botanical remarks worth reading in the *Correspondence of Sir J. E. Smith*, vol. ii. pp. 224–232; but I doubt the assertion, p. 227, that Herodotus 'knew nothing of any other kind of κύαμος in Egypt than that of the ordinary bean.'

[145] 'When Alexandria was taken by Amer, the lieutenant of the Caliph Omer, no less than 4,000 persons were engaged in selling vegetables in that city.' *Wilkinson's Ancient Egyptians*, vol. ii. p. 372, and see vol. i. p. 277, vol. iv. p. 60. Niebuhr (*Description de l'Arabie*, p. 136) says that the neighbourhood of Alexandria is so fertile, that 'le froment y rend le centuple.' See also on its rich vegetation, *Matter*, *Histoire de l'Ecole d'Alexandrie*, vol. i. p. 52.

[146] The encouragement given to the increase of population by the fertility arising from the inundation of the Nile, is observed by many writers, but by none so judiciously as Malthus; *Essay on Population*, vol. i. pp. 161–163. This great work, the principles of which have been grossly misrepresented, is still the best which has been written on the important subject of population, though the author, from a want of sufficient reading, often errs in his illustrations; while he, unfortunately, had no acquaintance with those branches of physical knowledge which are intimately connected with economical inquiries.

affording a striking contrast to those colder countries where, to preserve ordinary health, a supply of warmer and more costly covering is essential. Diodorus Siculus, who travelled in Egypt nineteen centuries ago, says, that to bring up a child to manhood did not cost more than twenty drachmas, scarcely thirteen shillings English money; a circumstance which he justly notices as a cause of the populousness of the country.[147]

To compress into a single sentence the preceding remarks, it may be said that in Egypt the people multiplied rapidly, because while the soil increased their supplies, the climate lessened their wants. The result was, that Egypt was not only far more thickly peopled than any other country in Africa, but probably more so than any in the ancient world. Our information upon this point is indeed somewhat scanty, but it is derived from sources of unquestioned credibility. Herodotus, who the more he is understood the more accurate he is found to be,[148] states that in the reign of Amasis there were said to have been twenty thousand inhabited cities.[149] This may, perhaps, be considered an exaggeration; but what is very observable is, that Diodorus Siculus, who travelled in Egypt four centuries after Herodotus, and whose jealousy of the reputation of his great predecessor made him anxious to discredit his statements,[150] does nevertheless, on this important point, confirm them. For he not only remarks that Egypt was at that time as densely inhabited as any existing country, but he adds, on the authority of records which were then extant, that it was formerly the most populous in the world, having contained, he says, upwards of eighteen thousand cities.[151]

These were the only two ancient writers who, from personal knowledge, were well acquainted with the state of Egypt;[152] and their testimony is the more valuable because it was evidently drawn from different sources; the information of Herodotus being chiefly collected at Memphis, that of Diodorus at Thebes.[153] And whatever discrepancies there may be between these two accounts, they are both agreed respecting the rapid increase of the people, and the servile condition into which they had fallen. Indeed, the mere appearance of those huge and costly buildings, which are still standing,

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[147] Τρέφουσι δὲ τὰ παιδία μετά τινος εὐχερείας ἀαπάνου, καὶ παντελῶς ἀπίστον … ἀνυποδέτων δὲ τῶν πλείστων καὶ γυμνῶν τρεφομένων διὰ τὴν εὐκρασιαν τῶν τόπων, τὴν πᾶσαν δαπάνην οἱ γονεῖς, ἄχρις ἂν εἰς ἡλικίαν ἔλθῃ τὸ τέκνον, οὐ πλείω ποιοῦσι δραχμῶν εἴκοσι, δι ἃς αἰτς μάλιστα τὴν Αἴγυπτον συμβαίνει πολυανθρωπίᾳ διαθέρειν, καὶ διὰ τοῦτο πλείστας ἔχειν μεγάλων ἔργωνκατασκευάς. *Bibliothec. Hist.* book i. chap. lxxx. vol. i. p. 238.

[148] Frederick Schlegel (*Philos. of Hist.* p. 247, London, 1846) truly says, 'The deeper and more comprehensive the researches of the moderns have been on ancient history, the more have their regard and esteem for Herodotus increased.' His minute information respecting Egypt and Asia Minor is now admitted by all competent geographers; and I may add, that a recent and very able traveller has given some curious proofs of his knowledge even of the western parts of Siberia. See Erman's valuable work, *Travels in Siberia*, vol. i. pp. 211, 297–301.

[149] Ἐπ' Ἀμάσιος δὲ βασιλέος λέγεται Αἴγυπτος μάλισ-α δὴτότε εὐδαιμονῆσαι, καὶ τὰ ἀπὸ τοῦ ποταμοῦ τῇ χώρῃς τοῖσι ἀνθρπισι. καὶ πόλις ἐν αὐτῇγενέσθαι τὰς ἁπάσας τότε δισμνρίας τὰς οἰκεομένας. *Herodot.* book ii. chap. clxxvii. vol. i. pp. 881, 882.

[150] Diodorus, who, though an honest and painstaking man, was in every respect inferior to Herodotus, says, impertinently enough, ὅσα μὲν οὖν Ἡόδοτος καί τινες τῶν τὰς Αἀγυπτίων πδάξεις συνταξαμένων ἐσχεδιάκασιν, ἑκουσίως προκρίναντες τῆς ἀληθείας τὸ παραδοξολογεῖν, καὶ μύθους πλάττειν φυχαγωγίας ἕνεκα, παρήσομεν. *Biblioth. Hist.* book i. chap. lxix. vol. i. p. 207. In other places he alludes to Herodotus in the same tone, without actually mentioning him.

[151] Πολυανθρωπία δὲ τὸ μὲν παλαιὸν πολὺ προέσχε πάντων τῶν γνωριζομένων τόπων κατὰ τὴν οἰκουμένην, καὶ καθ' ἡμᾶς δὲ οὐδενὸς τῶν ἄλλων δοκεῖ λείπεσθαι. ἐπὶ μὲν γὰρ τῶν ἀχαίων χρόνων ἔσχε κώμας ἀξιολόγους, καὶ πόλεις πλείους τῶν μυρίων καὶ ὀκτακισχιλίων, ὡ ἐν ταῖς ἀναγραφαῖς ὁρᾶν ἐστι κατακεχωρισμένον. *Diod. Sic. Biblioth. Hist.* book i. chap. xxxi. vol. i. p. 89.

[152] Notwithstanding the positive assertions of M. Matter (*Hist. de l'Ecole d'Alexandrie*, vol. ii. p. 285; compare *Hist. du Gnosticisme*, vol. i. p. 48), there is no good evidence for the supposed travels in Egypt of the earlier Greeks, and it is even questionable if Plato ever visited that country. ('Whether he ever was in Egypt is doubtful.' *Bunsen's Egypt*, vol. i. p. 60.) The Romans took little interest in the subject (*Bunsen*, vol. i. pp. 152–158); and, says M. Bunsen, p. 152, 'with Diodorus all systematic inquiry into the history of Egypt ceases, not only on the part of the Greeks, but of the ancients in general.' Mr. Leake, in an essay on the Quorra, arrives at the conclusion, that after the time of Ptolemy, the ancients made no additions to their knowledge of African geography. *Journal of Geographical Society*, vol. ii. p. 9.

[153] See on this some good remarks in *Heeren's African Nations*, vol. ii. pp. 202–207; and as to the difference between the traditions of Thebes and Memphis, see *Matter*, *Histoire de l'Ecole d'Alexandrie*, vol. i. p. 7. The power and importance of the two cities fluctuated, both being at different periods the capital. *Bunsen's Egypt*, vol. ii. pp. 54, 55, 244, 445, 446; *Vyse on the Pyramids*, vol. iii. pp. 27, 100; *Sharpe's History of Egypt*, vol. i. pp. 9, 19, 24, 34, 167, 185.

are a proof of the state of the nation that erected them. To raise structures so stupendous,[154] and yet so useless,[155] there must have been tyranny on the part of the rulers, and slavery on the part of the people. No wealth, however great, no expenditure, however lavish, could meet the expense which would have been incurred, if they had been the work of free men, who received for their labour a fair and honest reward.[156] But in Egypt, as in India, such considerations were disregarded, because everything tended to favour the upper ranks of society and depress the lower. Between the two there was an immense and impassable gap.[157] If a member of the industrious classes changed his usual employment, or was known to pay attention to political matters, he was severely punished;[158] and under no circumstances was the possession of land allowed to an agricultural labourer, to a mechanic, or indeed to any one except the king, the clergy, and the army.[159] The people at large were little better than beasts of burden; and all that was expected from them was an unremitting and unrequited labour. If they neglected their work, they were flogged; and the same punishment was frequently inflicted upon domestic servants, and even upon women.[160] These and similar regulations were well conceived; they were admirably suited to that vast social system, which, because it was based on despotism, could only be upheld by cruelty. Hence it was that, the industry of the whole nation being at the absolute command of a small part of it, there arose the possibility of rearing those vast edifices, which inconsiderate observers admire as a proof of civilization,[161] but which, in reality, are evidence of a state of things altogether depraved and unhealthy; a state in which the skill and the arts of an imperfect refinement injured those whom they ought to have benefited; so that the very resources which the people had created were turned against the people themselves.

That in such a society as this, much regard should be paid to human suffering, it would indeed be idle to expect.[162] Still, we are startled by the reckless prodigality with which, in Egypt, the upper classes squandered away the labour and the lives of the people. In this respect, as the monuments yet remaining abundantly prove, they stand alone and without a rival. We may form some idea of the almost incredible waste, when we hear that two thousand men were occupied for three years in

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[154] Sir John Herschel (*Disc. on Natural Philosophy*, p. 60) calculates that the great pyramid weighs twelve thousand seven hundred and sixty million pounds. Compare *Lyell's Principles of Geology*, p. 459, where the still larger estimate of six million tons is given. But according to Perring, the present quantity of masonry is 6,316,000 tons, or 82,110,000 cubic feet. See *Bunsen's Egypt*, vol. ii. p. 155, London, 1854, and *Vyse on the Pyramids*, 1840, vol. ii. p. 113.

[155] Many fanciful hypotheses have been put forward as to the purpose for which the pyramids were built; but it is now admitted that they were neither more nor less than tombs for the Egyptian kings! See *Bunsen's Egypt*, vol. ii. pp. xvii. 88, 105, 372, 389; and *Sharpe's History of Egypt*, vol. i. p. 21.

[156] For an estimate of the expense at which, one of the pyramids could be built in our time by European workmen, see *Vyse on the Pyramids*, vol. ii. p. 268. On account, however, of the number of disturbing causes, such calculations have little value.

[157] Those who complain that in Europe this interval is still too great, may derive a species of satisfaction from studying the old extra-European civilizations.

[158] *Wilkinson's Ancient Egyptians*, vol. ii. pp. 8, 9. 'Nor was any one permitted to meddle with political affairs, or to hold any civil office in the state.' … 'If any artizan meddled with political affairs, or engaged in any other employment than the one to which he had been brought up, a severe punishment was instantly inflicted upon him.' Compare *Diod. Sic. Bibliothec. Hist.* book i. chap. lxxiv. vol. i. p. 223.

[159] *Wilkinson's Ancient Egyptians*, vol. i. p. 263, vol. ii. p. 2; *Sharpe's History of Egypt*, vol. ii. p. 24.

[160] *Wilkinson's Ancient Egyptians*, vol. ii. pp. 41, 42, vol. iii. p. 69, vol. iv. p. 131. Compare Ammianus Marcellinus, in *Hamilton's Ægyptiaca*, p. 309.

[161] *Vyse on the Pyramids*, vol. i. p. 61, vol. ii. p. 92.

[162] 'Ein König ahmte den andern nach, oder suchte ihn zu übertreffen; indess das gutmüthige Volk seine Lebenstage am Baue dieser Monumente verzehren musste. So entstanden wahrscheinlich die Pyramiden und Obelisken Aegyptens. Nur in den ältesten Zeiten wurden sie gebauet: denn die spätere Zeit und jede Nation, die ein nützliches Gewerbe treiben lernte, bauete keine Pyramiden mehr. Weit gefehlt also, dass Pyramiden ein Kennzeichen von der Glückseligkeit und Aufklärung des alten Aegyptens seyn sollten, sind sie ein unwidersprechliches Denkmal von dem Aberglauben und der Gedankenlosigkeit sowohl der Armen, die da baueten, als der Ehrgeizigen, die den Bau befahlen.' *Herder's Ideen zur Geschichte*, vol. iii. pp. 103, 104: see also p. 293, and some admirable remarks in *Volney's Voyage en Egypte*, vol. i. pp. 240, 241. Even M. Bunsen, notwithstanding his admiration, says of one of the pyramids, 'the misery of the people, already grievously oppressed, was aggravated by the construction of this gigantic building… The bones of the oppressors of the people who for two whole generations harassed hundreds of thousands from day to day,' &c. *Bunsen's Egypt*, vol. ii. p. 176, a learned and enthusiastic work.

carrying a single stone from Elephantine to Sais;[163] that the Canal of the Red Sea alone, cost the lives of a hundred and twenty thousand Egyptians;[164] and that to build one of the pyramids required the labour of three hundred and sixty thousand men for twenty years.[165]

If, passing from the history of Asia and Africa, we now turn to the New World, we shall meet with fresh proof of the accuracy of the preceding views. The only parts of America which before the arrival of the Europeans were in some degree civilized, were Mexico and Peru;[166] to which may probably be added that long and narrow tract which stretches from the south of Mexico to the Isthmus of Panama. In this latter country, which is now known as Central America, the inhabitants, aided by the fertility of the soil,[167] seem to have worked out for themselves a certain amount of knowledge; since the ruins still extant, prove the possession of a mechanical and architectural skill too considerable to be acquired by any nation entirely barbarous.[168] Beyond this, nothing is known of their history; but the accounts we have of such buildings as Copan, Palenque, and Uxmal, make it highly probable that Central America was the ancient seat of a civilization, in all essential points similar to those of India and Egypt; that is to say, similar to them in respect to the unequal distribution of wealth and power, and the thraldom in which the great body of the people consequently remained.[169]

But although the evidence from which we might estimate the former condition of Central America is almost entirely lost,[170] we are more fortunate in regard to the histories of Mexico and Peru. There are still existing considerable and authentic materials, from which we may form an opinion on the ancient state of those two countries, and on the nature and extent of their civilization. Before, however, entering upon this subject, it will be convenient to point out what those physical laws were which determined the localities of American civilization; or, in other words, why it was that in these countries alone, society should have been organized into a fixed and settled system, while the rest of the New World was peopled by wild and ignorant barbarians. Such an inquiry will be found highly

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[163] Καὶ τοῦτο ἐκόμιζον μὲν ἐπ᾽ ἔτεα τρία διοχίλιοι δὲ οἱ οσετετάχατο ἄνδρες ἀγωγέες. *Herodot.* book ii. chap. clxxv. vol. i. p. 897. On the enormous weight of the stones which the Egyptians sometimes carried, see *Bunsen's Egypt*, vol. i. p. 379; and as to the machines employed, and the use of inclined roads for the transit, see *Vyse on the Pyramids*, vol. i. p. 197, vol. iii. pp. 14, 38.

[164] *Wilkinson's Ancient Egyptians*, vol. i. p. 70: but this learned writer is unwilling to believe a statement so adverse to his favourite Egyptians. It is likely enough that there is some exaggeration; still no one can dispute the fact of an enormous and unprincipled waste of human life.

[165] Τριάκοντα μὲν γὰρ καὶ ἓξ μυριάδες ἀνθρῶν, ὥς φασι, ταῖς τῶν ἔργων λειτουργίαισμα τέλος ἔσχε μόγις ἐτῶν εἴκοσι διελθόντων *Diod. Sic. Bibliothec. Hist.* book i. ch. lxiii. vol. i. p. 188.

[166] 'When compared with other parts of the New World, Mexico and Peru may be considered as polished states.' *History of America*, book vii. in *Robertson's Works*, p. 904. See, to the same effect, *Journal of Geograph. Society*, vol. v. p. 355.

[167] Compare *Squier's Central America*, vol. i. pp. 34, 244, 358, 421, vol. ii. p. 307, with *Journal of Geograph. Society*, vol. iii. p. 59, vol. viii. pp. 319, 323.

[168] Mr. Squier (*Central America*, vol. ii. p. 68); who explored Nicaragua, says of the statues, 'the material, in every case, is a black basalt, of great hardness, which, with the best of modern tools, can only be cut with difficulty.' Mr. Stephens (*Central America*, vol. ii. p. 355) found at Palenque 'elegant specimens of art and models for study.' See also vol. iii. pp. 276, 389, 406, vol. iv. p. 293. Of the paintings at Chichen he says (vol. iv. p. 311), 'they exhibit a freedom of touch which could only be the result of discipline and training under masters.' At Copan (vol. i. p. 151), 'it would be impossible, with the best instruments of modern times, to cut stones more perfectly.' And at Uxmal (vol. ii. p. 431), 'throughout, the laying and polishing of the stones are as perfect as under the rules of the best modern masonry.' Our knowledge of Central America is almost entirely derived from these two writers; and although the work of Mr. Stephens is much the more minute, Mr. Squier says (vol. ii. p. 306), what I believe is quite true, that until the appearance of his own book in 1853, the monuments in Nicaragua were entirely unknown. Short descriptions of the remains in Guatemala and Yucatan will be found in *Larenaudière's Mexique et Guatemala*, pp. 308–327, and in *Journal of Geograph. Society*, vol. iii. pp. 60–63.

[169] See the remarks on Yucatan in *Prichard's Physical History of Mankind*, vol. v. p. 348: 'a great and industrious, though perhaps, as the writer above cited (Gallatin) observes, an enslaved population. Splendid temples and palaces attest the power of the priests and nobles, while as usual no trace remains of the huts in which dwelt the mass of the nation.'

[170] Dr. M'Culloh (*Researches concerning the Aboriginal History of America*, pp. 272–340) has collected from the Spanish writers some meagre statements respecting the early condition of Central America; but of its social state and history, properly so called, nothing is known; nor is it even certain to what family of nations the inhabitants belonged, though a recent author can find 'la civilisation guatemalienne ou misteco-zapotèque et mayaquiche vivante pour nous encore dans les ruines de Mitla et de Palenque.' *Mexique et Guatemala, par Larenaudière*, p. 8, Paris, 1843. Dr. Prichard, too, refers the ruins in Central America to 'the Mayan race:' see *Prichard on Ethnology*, in *Report of British Association for 1847*, p. 252. But the evidence for these and similar statements is very unsatisfactory.

interesting, as affording further proof of the extraordinary, and indeed irresistible, force with which the powers of nature have controlled the fortunes of man.

The first circumstance by which we must be struck, is that in America, as in Asia and Africa, all the original civilizations were seated in hot countries; the whole of Peru proper being within the southern tropic, the whole of Central America and Mexico within the northern tropic. How the heat of the climate operated on the social and political arrangements of India and Egypt, I have attempted to examine; and it has, I trust, been proved that the result was brought about by diminishing the wants and requirements of the people, and thus producing a very unequal distribution of wealth and power. But, besides this, there is another way in which the average temperature of a country affects its civilization, and the discussion of which I have reserved for the present moment, because it may be more clearly illustrated in America than elsewhere. Indeed, in the New World, the scale on which Nature works, being much larger than in the Old, and her forces being more overpowering, it is evident that her operations on mankind may be studied with greater advantage than in countries where she is weaker, and where, therefore, the consequences of her movements are less conspicuous.

If the reader will bear in mind the immense influence which an abundant national food has been shown to exercise, he will easily understand how, owing to the pressure of physical phenomena, the civilization of America was, of necessity, confined to those parts where alone it was found by the discoverers of the New World. For, setting aside the chemical and geognostic varieties of soil, it may be said that the two causes which regulate the fertility of every country are heat and moisture.[171] Where these are abundant, the land will be exuberant; where they are deficient, it will be sterile. This rule is, of course, in its application subject to exceptions, arising from physical conditions which are independent of it; but if other things are equal, the rule is invariable. And the vast additions which, since the construction of isothermal lines, have been made to our knowledge of geographical botany, enable us to lay this down as a law of nature, proved not only by arguments drawn from vegetable physiology, but also by a careful study of the proportions in which plants are actually distributed in different countries.[172]

A general survey of the continent of America will illustrate the connexion between this law and the subject now before us. In the first place, as regards moisture, all the great rivers in the New World are on the eastern coast, none of them on the western. The causes of this remarkable fact are unknown;[173] but it is certain that neither in North, nor in South America, does one considerable river empty itself into the Pacific; while on the opposite side there are numerous rivers, some of enormous magnitude, all of great importance, as the Negro, the La Plata, the San Francisco, the Amazon, the Orinoco, the Mississippi, the Alabama, the Saint John, the Potomac, the Susquehannah, the Delaware, the Hudson, and the Saint Lawrence. By this vast water-system the soil is towards the

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[171] Respecting the connection between the vegetable productions of a country and its geognostic peculiarities, little is yet known; but the reader may compare *Meyen's Geography of Plants*, p. 64, with *Reports on Botany by the Ray Society*, 1846, pp. 70, 71. The chemical laws of soil are much better understood, and have a direct practical bearing on the use of manures. See *Turner's Chemistry*, vol. ii. pp. 1310–1314; *Brande's Chemistry*, vol. i. p. 691, vol. ii. pp. 1867–1869; *Balfour's Botany*, pp. 116–122; *Liebig and Kopp's Reports*, vol. ii. pp. 315, 328, vol. iii. p. 463, vol. iv. pp. 438, 442, 446.

[172] As to the influence of heat and moisture on the geographical distribution of plants, see *Henslow's Botany*, pp. 295–300, and *Balfour's Botany*, pp. 560–563. Meyen (*Geog. of Plants*, p. 263) says, 'I, therefore, after allowing for local circumstances, bring the vegetation of islands also under the law of nature, according to which the number of species constantly increases with increasing heat and corresponding humidity.' On the effect of temperature alone, compare a note in *Erman's Siberia*, vol. i. pp. 64, 65, with *Reports on Botany by the Ray Society*, pp. 339, 340. In the latter work, it is supposed that heat is the most important of all single agents; and though this is probably true, still the influence of humidity is immense. I may mention as an instance of this, that it has been recently ascertained that the oxygen used by seeds during germination, is not always taken from the air, but is obtained by decomposing water. See the curious experiments of Edwards and Colin in *Lindley's Botany*, vol. ii. pp. 261, 262, London, 1848; and on the direct nourishment which water supplies to vegetables, see Burdache's great work, *Traité de Physiologie*, vol. ix. pp. 254, 398.

[173] There is a difference between the watersheds of the eastern and western ranges, which explains this in part, but not entirely; and even if the explanation were more satisfactory than it is, it is too proximate to the phenomenon to have much scientific value, and must itself be referred to higher geological considerations.

east constantly irrigated:[174] but towards the west there is in North America only one river of value, the Oregon;[175] while in South America, from the Isthmus of Panama to the Straits of Magellan, there is no great river at all.

But as to the other main cause of fertility, namely heat, we find in North America a state of things precisely the reverse. There we find that while the irrigation is on the east, the heat is on the west.[176] This difference of temperature between the two coasts is probably connected with some great meteorological law; for in the whole of the northern hemisphere, the eastern part of continents and of islands is colder than the western.[177] Whether, however, this is owing to some large and comprehensive cause, or whether each instance has a cause peculiar to itself, is an alternative, in the present state of knowledge, impossible to decide; but the fact is unquestionable, and its influence upon the early history of America is extremely curious. In consequence of it, the two great conditions of fertility have not been united in any part of the continent north of Mexico. The countries on the one side have wanted heat; those on the other side have wanted irrigation. The accumulation of wealth being thus impeded, the progress of society was stopped; and until, in the sixteenth century, the knowledge of Europe was brought to bear upon America, there is no instance of any people north of the twentieth parallel, reaching even that imperfect civilization to which the inhabitants of India and of Egypt easily attained.[178] On the other hand, south of the twentieth parallel, the continent suddenly changes its form, and, rapidly contracting, becomes a small strip of land, until it reaches the Isthmus of Panama. This narrow tract was the centre of Mexican civilization; and a comparison of the preceding arguments will easily show why such was the case; for the peculiar configuration of the land secured a very large amount of coast, and thus gave to the southern part of North America the character of an island. Hence there arose one of the characteristics of an insular climate, namely, an increase of moisture caused by the watery vapour which springs from the sea.[179] While, therefore, the position of Mexico

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[174] Of this irrigation some idea may be formed from an estimate that the Amazon drains an area of 2,500,000 square miles; that its mouth is 96 miles wide; and that it is navigable 2,200 miles from its mouth. *Somerville's Physical Geography*, vol. i. p. 423. Indeed, it is said in an essay on the Hydrography of South America (*Journal of Geograph. Society*, vol. ii. p. 250), that 'with the exception of one short portage of three miles, water flows, and is for the most part navigable, between Buenos Ayres, in 35° south latitude, to the mouth of the Orinoco, in nearly 9° north.' See also on this river-system, vol. v. p. 93, vol. x. p. 267. In regard to North America, Mr. Rogers (*Geology of North America*, p. 8, *Brit. Assoc. for 1834*) says, 'the area drained by the Mississippi and all its tributaries is computed at 1,099,000 square miles.' Compare *Richardson's Arctic Expedition*, vol. ii. p. 164.

[175] The Oregon, or Columbia as it is sometimes called, forms a remarkable botanical line, which is the boundary of the Californian flora. See *Reports on Botany by the Ray Society*, p. 113.

[176] For proof that the mean temperature of the western coast of North America is higher than that of the eastern coast, see *Journal of Geograph. Society*, vol. ix. p. 380, vol. xi. pp. 168, 216; *Humboldt*, *la Nouvelle Espagne*, vol. i. pp. 42, 336; *Richardson's Arctic Expedition*, vol. ii. pp. 214, 218, 219, 259, 260. This is well illustrated by the botanical fact, that on the west coast the Coniferæ grow as high as 68° or 70° north latitude; while on the east their northern limit is 60°. See an Essay on the Morphology of the Coniferæ, in *Reports on Botany by the Ray Society*, p. 8, which should be compared with *Forry on the Climate of the United States and its Endemic Influences*, New York, 1842, p. 89.

[177] 'Writers on climate have remarked that the eastern coasts of continents in the northern hemisphere have a lower mean temperature than the western coasts.' *Richardson on North American Zoology*, p. 129, *Brit. Assoc. for* 1836: see also *Report for* 1841, *Sections*, p. 28; *Davis's China*, vol. iii. pp. 140, 141; *Journal of Geograph. Society*, vol. xxii. p. 176.

[178] The little that is known of the early state of the North-American tribes has been brought together by Dr. M'Culloh in his learned work, *Researches concerning America*, pp. 119–146. He says, p. 121, that they 'lived together without laws and civil regulations.' In that part of the world, the population has probably never been fixed; and we now know that the inhabitants of the north-east of Asia have at different times passed over to the north-west of America, as in the case of the Tschuktschi, who are found in both continents. Indeed, Dobell was so struck by the similarity between the North-American tribes and some he met with nearly as far west as Tomsk, that he believed their origin to be the same. See *Dobell's Travels in Kamtschatka and Siberia*, 1830, vol. ii. p. 112. And on this question of intercourse between the two continents, compare *Crantz's History of Greenland*, vol. i. pp. 259, 260, with *Richardson's Arctic Expedition*, vol. i. pp. 362, 363, and *Prichard's Physical History of Mankind*, vol. iv. pp. 458, 463, vol. v. pp. 371, 378.

[179] From general physical considerations, we should suppose a relation between amount of rain and extent of coast; and in Europe, where alone we have extensive meteorological records, the connexion has been proved statistically. 'If the quantity of rain that falls in different parts of Europe is measured, it is found to be less, other things being equal, as we recede from the sea-shore.' *Kaemtz's Meteorology*, 1845, p. 139. Compare pp. 91, 94. Hence, no doubt, the greater rarity of rain as we advance north from Mexico. 'Au nord du 20°, surtout depuis les 22° au 30° de latitude, les pluies, que ne durent que pendant les mois de juin, de juillet, d'août et de septembre, sont peu fréquentes dans l'intérieur du pays.' *Humboldt*, *la Nouvelle Espagne*, vol. i. p. 46.

near the equator gave it heat, the shape of the land gave it humidity; and this being the only part of North America in which these two conditions were united, it was likewise the only part which was at all civilized. There can be no doubt that if the sandy plains of California and southern Columbia, instead of being scorched into sterility, had been irrigated by the rivers of the east, or if the rivers of the east had been accompanied by the heat of the west, the result of either combination would have been that exuberance of soil by which, as the history of the world decisively proves, every early civilization was preceded. But inasmuch as, of the two elements of fertility, one was deficient in every part of America north of the twentieth parallel, it followed that, until that line was passed, civilization could gain no resting-place; and there never has been found, and we may confidently assert never will be found, any evidence that even a single ancient nation, in the whole of that enormous continent, was able to make much progress in the arts of life, or organize itself into a fixed and permanent society.

Thus far as to the physical agents which controlled the early destinies of North America. But in reference to South America, a different train of circumstances came into play; for the law by virtue of which the eastern coasts are colder than the western, is not only inapplicable to the southern hemisphere, but is replaced by another law precisely the reverse. North of the equator, the east is colder than the west; south of the equator, the east is hotter than the west.[180] If now, we connect this fact with what has been noticed respecting the vast river-system which distinguishes the east of America from the west, it becomes evident that in South America there exists that coöperation of heat and humidity in which North America is deficient. The result is, that the soil in the eastern part of South America is remarkable for its exuberance, not only within the tropic, but considerably beyond it; the south of Brazil, and even part of Uruguay, possessing a fertility not to be found in any country of North America situated under a corresponding latitude.

On a hasty view of the preceding generalizations, it might be expected that the eastern side of South America, being thus richly endowed by nature,[181] would have been the seat of one of those civilizations, which, in other parts of the world, similar causes produced. But if we look a little further, we shall find that what has just been pointed out, by no means exhausts even the physical bearings of this subject, and that we must take into consideration a third great agent, which has sufficed to neutralize the natural results of the other two, and to retain in barbarism the inhabitants of what otherwise would have been the most flourishing of all the countries of the New World.

The agent to which I allude is the trade-wind; a striking phenomenon, by which, as we shall hereafter see, all the civilizations anterior to those of Europe were greatly and injuriously influenced. This wind covers no less than 56° of latitude; 28° north of the equator, and 28° south of it.[182] In this large tract, which comprises some of the most fertile countries in the world, the trade-wind blows, during the whole year, either from the north-east or from the south-east.[183] The causes of this regularity are now well understood, and are known to depend partly on the displacement of air at the equator, and partly on the motion of the earth; for the cold air from the poles is constantly

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[180] 'The difference between the climates of the east and west coasts of continents and islands, has also been observed in the southern hemisphere but here the west coasts are colder than the east, while in the northern hemisphere the east coasts are the colder.' *Meyen's Geography of Plants*, 1846, p. 24.

[181] Mr. Darwin, who has written one of the most valuable works ever published on South America, was struck by this superiority of the eastern coast; and he mentions that 'fruits which ripen well and are very abundant, such as the grape and fig, in latitude 41° on the east coast, succeed very poorly in a lower latitude on the opposite side of the continent.' *Darwin's Journal of Researches*, Lond. 1840, p. 268. Compare *Meyen's Geog. of Plants*, pp. 25, 188. So that the proposition of Daniell (*Meteorological Essays*, p. 104, sec. xiv.) is expressed too generally, and should be confined to continents north of the equator.

[182] The trade-winds sometimes reach the thirtieth parallel. See *Daniell's Meteorological Essays*, p. 469. Dr. Traill (*Physical Geography*, Edin. 1838, p. 200), says, 'they extend to about 30° on each side of the equator:' but I believe they are rarely found so high; though Robertson is certainly wrong in supposing that they are peculiar to the tropics; *History of America*, book iv. in *Robertson's Works*, p. 781.

[183] 'In the northern hemisphere the trade-wind blows from the north-east, and in the southern from the south-east.' *Meyen's Geog. of Plants*, p. 42. Compare *Walsh's Brazil*, vol. i. p. 112, vol. ii. p. 494; and on the 'tropical east-wind' of the Gulf of Mexico, see *Forry's Climate of the United States*, p. 206. Dr. Forry says that it has given to the growth of the trees 'an inclination from the sea.'

flowing towards the equator, and thus producing northerly winds in the northern hemisphere, and southerly winds in the southern. These winds are, however, deflected from their natural course by the movement of the earth, as it revolves on its axis from west to east. And as the rotation of the earth is, of course, more rapid at the equator than elsewhere, it happens that in the neighbourhood of the equator the speed is so great as to outstrip the movements of the atmosphere from the poles, and forcing them into another direction, gives rise to those easterly currents which are called trade-winds.[184] What, however, we are now rather concerned with, is not so much an explanation of the trade-winds, as an account of the way in which this great physical phenomenon is connected with the history of South America.

The trade-wind, blowing on the eastern coast of South America, and proceeding from the east, crosses the Atlantic Ocean, and therefore reaches the land surcharged with the vapours accumulated in its passage. These vapours, on touching the shore, are, at periodical intervals, condensed into rain; and as their progress westward is checked by that gigantic chain of the Andes, which they are unable to pass,[185] they pour the whole of their moisture on Brazil, which, in consequence, is often deluged by the most destructive torrents.[186] This abundant supply, being aided by that vast river-system peculiar to the eastern part of America, and being also accompanied by heat, has stimulated the soil into an activity unequalled in any other part of the world.[187] Brazil, which is nearly as large as the whole of Europe, is covered with a vegetation of incredible profusion. Indeed, so rank and luxuriant is the growth, that Nature seems to riot in the very wantonness of power. A great part of this immense country is filled with dense and tangled forests, whose noble trees, blossoming in unrivalled beauty, and exquisite with a thousand hues, throw out their produce in endless prodigality. On their summit are perched birds of gorgeous plumage, which nestle in their dark and lofty recesses. Below, their base and trunks are crowded with brushwood, creeping plants, innumerable parasites, all swarming with life. There, too, are myriads of insects of every variety; reptiles of strange and singular form; serpents and lizards, spotted with deadly beauty: all of which find means of existence in this vast workshop and repository of Nature. And that nothing may be wanting to this land of marvels, the forests are skirted by enormous meadows, which, reeking with heat and moisture, supply nourishment to countless herds of wild cattle, that browse and fatten on their herbage; while the adjoining plains, rich in another form of life, are the chosen abode of the subtlest and most ferocious animals, which prey on each other, but which it might almost seem no human power can hope to extirpate.[188]

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[184] Respecting the causes of the trade-winds, see *Somerville's Connexion of the Physical Sciences*, pp. 136, 137; *Leslie's Natural Philosophy*, p. 518; *Daniell's Meteorological Essays*, pp. 44, 102, 476–481; *Kaemtz's Meteorology*, pp. 37–39; *Prout's Bridgewater Treatise*, pp. 254–256. The discovery of the true theory is often ascribed to Mr. Daniell; but Hadley was the real discoverer. *Note in Prout*, p. 257. The monsoons, which popular writers frequently confuse with the trade-winds, are said to be caused by the predominance of land, and by the difference between its temperature and that of the sea: see *Kaemtz*, pp. 42–45. On what may be called the conversion of the trades into monsoons, according to the laws very recently promulgated by M. Dove, see *Report of British Association for* 1847 (*Transac. of Sections*, p. 30) and *Report for* 1848, p. 94. The monsoons are noticed in *Humboldt's Cosmos*, vol. ii. p. 485; *Asiatic Researches*, vol. xviii. part i. p. 261; *Thirlwall's History of Greece*, vol. vii. pp. 13, 55; *Journal of Geograph. Society*, vol. ii. p. 90, vol. iv. pp. 8, 9, 148, 149, 169, vol. xi. p. 162, vol. xv. pp. 146–149, vol. xvi. p. 185, vol. xviii. pp. 67, 68, vol. xxiii. p. 112; *Low's Sarawak*, p. 30.

[185] *Lyell's Principles of Geology*, pp. 201, 714, 715; see also *Somerville's Physical Geography*, vol. ii. p. 71. And on this confining power of the Cordillera of the Andes, see *Azara*, *Voyages dans l'Amérique Méridionale*, vol. i. p. 33. According to Dr. Tschudi, the eastern chain is properly the Andes, and the western the Cordillera; but this distinction is rarely made. *Tschudi's Travels in Peru*, p. 290.

[186] On the rain of Brazil, see *Daniell's Meteorological Essays*, p. 335; *Darwin's Journal*, pp. 11, 33; *Spix and Martius's Travels in Brazil*, vol. ii. p. 113; *Gardner's Travels in Brazil*, pp. 53, 99, 114, 175, 233, 394.

[187] Dr. Gardner, who looked at these things with the eye of a botanist, says that near Rio de Janeiro the heat and moisture are sufficient to compensate even the poorest soil; so that 'rocks, on which scarcely a trace of earth is to be observed, are covered with vellozias, tillandsias, melastomaceæ, cacti, orchideæ, and ferns, and all in the vigour of life.' *Gardner's Travels in Brazil*, p. 9. See also on this combination, *Walsh's Brazil*, vol. ii. pp. 297, 298, a curious description of the rainy season: 'For eight or nine hours a day, during some weeks, I never had a dry shirt on me; and the clothes I divested myself of at night, I put on quite wet in the morning. When it did not rain, which was very rare, there shone out in some places a burning sun; and we went smoking along, the wet exhaling by the heat, as if we were dissolving into vapour.'

[188] On the natural history of Brazil, I have compared a few notices in *Swainson's Geography of Animals*, pp. 75–87, with *Cuvier*,

Such is the flow and abundance of life by which Brazil is marked above all the other countries of the earth.[189] But, amid this pomp and splendour of Nature, no place is left for Man. He is reduced to insignificance by the majesty with which he is surrounded. The forces that oppose him are so formidable that he has never been able to make head against them, never able to rally against their accumulated pressure. The whole of Brazil, notwithstanding its immense apparent advantages, has always remained entirely uncivilized; its inhabitants wandering savages, incompetent to resist those obstacles which the very bounty of Nature had put in their way. For the natives, like every people in the infancy of society, are averse to enterprise; and being unacquainted with the arts by which physical impediments are removed, they have never attempted to grapple with the difficulties that stopped their social progress. Indeed, those difficulties are so serious, that during more than three hundred years the resources of European knowledge have been vainly employed in endeavouring to get rid of them. Along the coast of Brazil, there has been introduced from Europe a certain amount of that civilization, which the natives by their own efforts could never have reached. But such civilization, in itself very imperfect, has never penetrated the recesses of the country; and in the interior there is still found a state of things similar to that which has always existed. The people, ignorant, and therefore brutal, practising no restraint, and recognizing no law, continue to live on in their old and inveterate barbarism.[190] In their country, the physical causes are so active, and do their work on a scale of such unrivalled magnitude, that it has hitherto been found impossible to escape from the effects of their united action. The progress of agriculture is stopped by impassable forests, and the harvests are destroyed by innumerable insects.[191] The mountains are too high to scale, the rivers are too wide to bridge; every thing is contrived to keep back the human mind, and repress its rising ambition. It is thus that the energies of Nature have hampered the spirit of Man. Nowhere else is there so painful a contrast between the grandeur of the external world and the littleness of the internal. And the mind, cowed by this unequal struggle, has not only been unable to advance, but without foreign aid it would undoubtedly have receded. For even at present, with all the improvements constantly introduced from Europe, there are no signs of real progress; while, notwithstanding the frequency of colonial settlements, less than one-fiftieth of the land is cultivated.[192] The habits of the people are as barbarous as ever; and as to their numbers, it is well worthy of remark, that Brazil, the country where, of all others, physical resources are most powerful, where both vegetables and animals are

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Règne Animal, vol. i. p. 460, vol. ii. pp. 28, 65, 66, 89, vol. iv. pp. 51, 75, 258, 320, 394, 485, 561, vol. v. pp. 40, 195, 272, 334, 553; *Azara*, *Amérique Méridionale*, vol. i. pp. 244–388, and the greater part of vols. iii. and iv.; *Winckler*, *Geschichte der Botanik*, pp. 378, 576–578; *Southey's History of Brazil*, vol. i. p. 27, vol. iii. pp. 315, 823; *Gardner's Brazil*, pp. 18, 32–34, 41–44, 131, 330; *Spix and Martius's Brazil*, vol. i. pp. 207–209, 238–248, vol. ii. pp. 131, 160–163. And as to the forests, which are among the wonders of the world, *Somerville's Physical Geog.* vol. ii. pp. 204–206; *Prichard's Physical History*, vol. v. p. 497; *Darwin's Journal*, pp. 11, 24; *Walsh's Brazil*, vol. i. p. 145, vol. ii. pp. 29, 30, 253.

[189] This extraordinary richness has excited the astonishment of all who have seen it. Mr. Walsh, who had travelled in some very fertile countries, mentions 'the exceeding fecundity of nature which characterizes Brazil.' *Walsh's Brazil*, vol. ii. p. 19. And a very eminent naturalist, Mr. Darwin, says (*Journal*, p. 29), 'In England, any person fond of natural history enjoys in his walks a great advantage, by always having something to attract his attention; but in these fertile climates, teeming with life, the attractions are so numerous that he is scarcely able to walk at all.'

[190] Azara (*Amérique Méridionale*, vol. ii. pp. 1–168) gives a curious, but occasionally a disgusting account of the savage natives in that part of Brazil south of 16°, to which his observations were limited. And as to the inhabitants of other parts, see *Henderson's History of Brazil*, pp. 28, 29, 107, 173, 248, 315, 473; *M'Culloh's Researches concerning America*, p. 77; and the more recent account of Dr. Martius, in *Journal of Geograph. Society*, vol. ii. pp. 191–199. Even in 1817, it was rare to see a native in Rio de Janeiro (*Spix and Martius's Travels in Brazil*, vol. i. p. 142); and Dr. Gardner (*Travels in Brazil*, pp. 61, 62) says, that 'more than one nation of Indians in Brazil' have returned to that savage life from which they had apparently been reclaimed.

[191] Sir C. Lyell (*Principles of Geology*, p. 682) notices 'the incredible number of insects which lay waste the crops in Brazil;' and Mr. Swainson, who had travelled in that country, says 'The red ants of Brazil are so destructive, and at the same time so prolific, that they frequently dispute possession of the ground with the husbandman, defy all his skill to extirpate their colonies, and fairly compel him to leave his fields uncultivated.' *Swainson on the Geography and Classification of Animals*, p. 87. See more about these insects in *Darwin's Journal*, pp. 37–43; *Southey's History of Brazil*, vol. i. pp. 144, 256, 333–335, 343, vol. ii. pp. 365, 642, vol. iii. p. 876; *Spix and Martius's Travels in Brazil*, vol. i. p. 259, vol. ii. p. 117; *Cuvier*, *Règne Animal*, vol. iv. p. 320.

[192] The cultivated land is estimated at from 1½ to 2 per cent. See *M'Culloch's Geog. Dict.* 1849, vol. i. p. 430.

most abundant, where the soil is watered by the noblest rivers, and the coast studded by the finest harbours – this immense territory, which is more than twelve times the size of France, contains a population not exceeding six millions of people.[193]

These considerations sufficiently explain why it is, that in the whole of Brazil there are no monuments even of the most imperfect civilization; no evidence that the people had, at any period, raised themselves above the state in which they were found when their country was first discovered. But immediately opposite to Brazil there is another country, which, though situated in the same continent, and lying under the same latitude, is subjected to different physical conditions, and therefore was the scene of different social results. This is the celebrated kingdom of Peru, which included the whole of the southern tropic, and which, from the circumstances just stated, was naturally the only part of South America where any thing approaching to civilization could be attained. In Brazil, the heat of the climate was accompanied by a twofold irrigation, arising first from the immense river-system incidental to the eastern coast; and secondly, from the abundant moisture deposited by the trade-winds. From this combination there resulted that unequalled fertility, which, so far as Man was concerned, defeated its own ends, stopping his progress by an exuberance, which, had it been less excessive, it would have aided. For, as we have clearly seen, when the productive powers of Nature are carried beyond a certain point, the imperfect knowledge of uncivilized men is unable to cope with them, or in any way turn them to their own advantage. If, however, those powers, being very active, are nevertheless confined within manageable limits, there arises a state of things similar to that noticed in Asia and Africa; where the profusion of Nature, instead of hindering social progress, favoured it, by encouraging that accumulation of wealth, without some share of which progress is impossible.

In estimating, therefore, the physical conditions by which civilization was originally determined, we have to look, not merely at the exuberance, but also at what may be called the manageability of Nature; that is, we have to consider the ease with which the resources may be used, as well as the number of the resources themselves. Applying this to Mexico and Peru, we find that they were the countries of America where this combination most happily occurred. For though their resources were much less numerous than those of Brazil, they were far more easy to control; while at the same time the heat of the climate brought into play those other laws by which, as I have attempted to show, all the early civilizations were greatly influenced. It is a very remarkable fact, which, I believe, has never been observed, that even in reference to latitude, the present limit of Peru to the south corresponds with the ancient limit of Mexico to the north; while, by a striking, but to me perfectly natural coincidence, both these boundaries are reached before the tropical line is passed; the boundary of Mexico being 21° N. lat., that of Peru 21½° S. lat.[194]

Such is the wonderful regularity which history, when comprehensively studied, presents to our view. And if we compare Mexico and Peru with those countries of the Old World which have been already noticed, we shall find, as in all the civilizations anterior to those of Europe, that their social phenomena were subordinate to their physical laws. In the first place, the characteristics of their national food were precisely those met with in the most flourishing parts of Asia and Africa. For although few of the nutritious vegetables belonging to the Old World were found in the New, their place was supplied by others exactly analogous to rice and dates; that is to say, marked by the same abundance, by the same facility of growth, and by the same exuberant returns; therefore, followed by

[193] During the present century, the population of Brazil has been differently stated at different times; the highest computation being 7,000,000, and the lowest 4,000,000. Comp. *Humboldt*, *Nouv. Espagne*, vol. ii. p. 855; *Gardner's Brazil*, p. 12; *M'Culloch's Geog. Dict.* 1849, vol. i. pp. 430, 434. Mr. Walsh describes Brazil as 'abounding in lands of the most exuberant fertility, but nearly destitute of inhabitants.' *Walsh's Brazil*, vol. i. p. 248. This was in 1828 and 1829, since which the European population has increased; but, on the whole, 6,000,000 seems to be a fair estimate of what can only be known approximatively. In *Alison's History*, vol. x. p. 229, the number given is 5,000,000; but the area also is rather understated.

[194] Vidaca being the most southerly point of the present Peruvian coast; though the conquests of Peru, incorporated with the empire, extended far into Chili, and within a few degrees of Patagonia. In regard to Mexico, the northern limit of the empire was 21°, on the Atlantic coast, and 19° on the Pacific. *Prescott's History of Mexico*, vol. i. p. 2.

the same social results. In Mexico and Peru, one of the most important articles of food has always been maize, which, we have every reason to believe, was peculiar to the American continent.[195] This, like rice and dates, is eminently the product of a hot climate; and although it is said to grow at an elevation of upwards of 7,000 feet,[196] it is rarely seen beyond the fortieth parallel,[197] and its exuberance rapidly diminishes with the diminution of temperature. Thus, for example, in New California, its average yield is seventy or eighty fold;[198] but in Mexico Proper the same grain yields three or four hundred fold, and, under very favourable circumstances, even eight hundred fold.[199]

A people who derived their sustenance from a plant of such extraordinary fecundity, had little need to exercise their industrious energies; while at the same time they had every opportunity of increasing their numbers, and thus producing a train of social and political consequences similar to those which I have noticed in India and in Egypt. Besides this, there were, in addition to maize, other kinds of food to which the same remarks are applicable. The potato, which, in Ireland, has brought about such injurious effects by stimulating the growth of population, is said to be indigenous to Peru; and although this is denied by a very high authority,[200] there is, at all events, no doubt that it was found there in great abundance when the country was first discovered by the Europeans.[201] In Mexico, potatoes were unknown till the arrival of the Spaniards; but both Mexicans and Peruvians lived to a great extent on the produce of the banana; a vegetable whose reproductive powers are so extraordinary, that nothing but the precise and unimpeachable testimony of which we are possessed could make them at all credible. This remarkable plant is, in America, intimately connected with the physical laws of climate; since it is an article of primary importance for the subsistence of man whenever the temperature passes a certain point.[202] Of its nutritive powers, it is enough to say, that an acre sown with it will support more than fifty persons; whereas the same amount of land sown with wheat in Europe will only support two persons.[203] As to the exuberance of its growth, it is calculated

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[195] A question has been raised as to the Asiatic origin of maize: *Reynier*, *Economie des Arabes*, pp. 94, 95. But later and more careful researches seem to have ascertained beyond much doubt that it was unknown before America was discovered. Compare *Meyen's Geography of Plants*, pp. 44, 303, 304; *Walckenaer's note in Azara, Amérique Méridionale*, vol. i. p. 149; *Cuvier*, *Progrès des Sciences Naturelles*, vol. ii. p. 354; *Cuvier*, *Eloges Historiques*, vol. ii. p. 178; *Loudon's Encyclopædia of Agriculture*, p. 829; *M'Culloch's Dict. of Commerce*, 1849, p. 831. The casual notices of maize by Ixtlilxochitl, the native Mexican historian, show its general use as an article of food before the arrival of the Spaniards: see *Ixtlilxochitl*, *Histoire des Chichimèques*, vol. i. pp. 53, 64, 240, vol. ii. p. 19.

[196] 'Maize, indeed, grows to the height of 7,200 feet above the level of the sea, but only predominates between 3,000 and 6,000 of elevation.' *Lindley's Vegetable Kingdom*, 1847, p. 112. This refers to the tropical parts of South America; but the Zea Mais is said to have been raised on the slopes of the Pyrenees 'at an elevation of 3,000 to 4,000 feet.' See *Austen on the Forty Days' Maize*, in *Report of Brit. Assoc. for* 1849, *Trans. of Sec.* p. 68.

[197] M. Meyen (*Geog. of Plants*, p. 302) and Mr. Balfour (*Botany*, p. 567) suppose that in America 40° is about its limit; and this is the case in regard to its extensive cultivation; but it is grown certainly as high as 52°, perhaps as high as 54°, north latitude: see *Richardson's Arctic Expedition*, 1851, vol. ii. pp. 49, 234.

[198] 'Sous la zone tempérée, entre les 33 et 38 degrés de latitude, par exemple dans la Nouvelle Californie, le maïs ne produit, en général, année commune, que 70 à 80 grains pour un.' *Humboldt*, *la Nouvelle Espagne*, vol. ii. p. 375.

[199] 'La fécondité du Tlaolli, ou maïs mexicain, est au-delà de tout ce que l'on peut imaginer en Europe. La plante, favorisée par de fortes chaleurs et par beaucoup d'humidité, acquiert une hauteur de deux à trois mètres. Dans les belles plaines qui s'étendent depuis San Juan del Rio à Queretaro, par exemple dans les terres de la grande métairie de l'Esperanza, une fanègue de maïs en produit quelquefois huit cents. Des terrains fertiles en donnent, année commune, trois à quatre cents.' *Humboldt*, *Nouv. Espagne*, vol. ii. p. 374. Nearly the same estimate is given by Mr. Ward: see *Ward's Mexico*, vol. i. p. 32, vol. ii. p. 230. In Central America (Guatemala), maize returns three hundred for one. *Mexique et Guatemala, par Larenaudière*, p. 257.

[200] 'La pomme de terre n'est pas indigène au Pérou.' *Humboldt*, *Nouv. Espagne*, vol. ii. p. 400. On the other hand, Cuvier (*Histoire des Sciences Naturelles*, part ii. p. 185) peremptorily says, 'il est impossible de douter qu'elle ne soit originaire du Pérou:' see also his *Eloges Historiques*, vol. ii. p. 171. Compare *Winckler*, *Gesch. der Botanik*, p. 92: 'Von einem gewissen Carate unter den Gewächsen Peru's mit dem Namen papas aufgeführt.'

[201] And has been used ever since for food. On the Peruvian potato compare *Tschudi's Travels in Peru*, pp. 178, 368, 386; *Ulloa's Voyage to South America*, vol. i. pp. 287, 288. In Southern Peru, at the height of 13,000 or 14,000 feet, a curious process takes place, the starch of the potato being frozen into saccharine. See a valuable paper by Mr. Bollaert in *Journal of Geograph. Society*, vol. xxi. p. 119.

[202] Humboldt (*Nouv. Espagne*, vol. ii. p. 359) says, 'partout où la chaleur moyenne de l'année excède vingt-quatre degrés centigrades, le fruit du bananier est un objet de culture du plus grand intérêt pour la subsistance de l'homme.' Compare *Bullock's Mexico*, p. 281.

[203] *M'Culloch's Geograph. Dict.*, 1849, vol. ii. p. 315.

that, other circumstances remaining the same, its produce is forty-four times greater than that of potatoes, and a hundred and thirty-three times greater than that of wheat.[204]

It will now be easily understood why it was that, in all important respects, the civilizations of Mexico and Peru were strictly analogous to those of India and Egypt. In these four countries, as well as in a few others in Southern Asia and Central America, there existed an amount of knowledge, despicable indeed if tried by an European standard, but most remarkable if contrasted with the gross ignorance which prevailed among the adjoining and cotemporary nations. But in all of them there was the same inability to diffuse even that scanty civilization which they really possessed; there was the same utter absence of any thing approaching to the democratic spirit; there was the same despotic power on the part of the upper classes, and the same contemptible subservience on the part of the lower. For, as we have clearly seen, all these civilizations were affected by certain physical causes, which, though favourable to the accumulation of wealth, were unfavourable to a just subdivision of it. And as the knowledge of men was still in its infancy,[205] it was found impossible to struggle against these physical agents, or prevent them from producing those effects on the social organization which I have attempted to trace. Both in Mexico and in Peru, the arts, and particularly those branches of them which minister to the luxury of the wealthy classes, were cultivated with great success. The houses of the higher ranks were filled with ornaments and utensils of admirable workmanship; their chambers were hung with splendid tapestries; their dresses and their personal decorations betrayed an almost incredible expense; their jewels of exquisite and varied form; their rich and flowing robes embroidered with the rarest feathers, collected from the most distant parts of the empire: all supplying evidence of the possession of unlimited wealth, and of the ostentatious prodigality with which that wealth was wasted.[206] Immediately below this class came the people; and what their condition was, may be easily imagined. In Peru the whole of the taxes were paid by them; the nobles and the clergy being altogether exempt.[207] But as, in such a state of society, it was impossible for the people to accumulate property, they were obliged to defray the expenses of government by their personal labour, which was placed under the entire command of the state.[208] At the same time, the rulers of the country were well aware that, with a system like this, feelings of personal independence were incompatible; they therefore contrived laws by which, even in the most minute matters, freedom of action was

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[204] 'Je doute qu'il existe une autre plante sur le globe, qui, sur un petit espace de terrain, puisse produire une masse de substance nourrissante aussi considérable.' … 'Le produit des bananes est par conséquent à celui du froment comme 133: 1 – à celui des pommes de terre comme 44: l'*Humboldt*, *Nouvelle Espagne*, vol. ii. pp. 362, 363. See also *Prout's Bridgewater Treatise*, p. 333, edit. 1845; *Prescott's Peru*, vol. i. pp. 131, 132; *Prescott's Mexico*, vol. i. p. 114. Earlier notices, but very imperfect ones, of this remarkable vegetable may be found in *Ulloa's South America*, vol. i. p. 74; and in *Boyle's Works*, vol. iii. p. 590.

[205] The only science with which they had much acquaintance was astronomy, which the Mexicans appear to have cultivated with considerable success. Compare the remark of La Place, in *Humboldt*, *Nouvelle Espagne*, vol. i. p. 92, with *Prichard's Physical History*, vol. v. pp. 323, 329; *M'Culloch's Researches*, pp. 201–225; *Larenaudière's Mexique*, pp. 51, 52; *Humboldt's Cosmos*, vol. iv. p. 456; *Journal of Geog. Society*, vol. vii. p. 3. However, their astronomy, as might be expected, was accompanied by astrology: see *Ixtlilxochitl*, *Histoire des Chichimèques*, vol. i. p. 168, vol. ii. pp. 94, 111.

[206] The works of art produced by the Mexicans and Peruvians are under-rated by Robertson: who, however, admits that he had never seen them. *History of America*, book vii., in *Robertson's Works*, pp. 909, 920. But during the present century considerable attention has been paid to this subject: and in addition to the evidence of skill and costly extravagance collected by Mr. Prescott, *History of Peru*, vol. i. pp. 28, 142; *History of Mexico*, vol. i. pp. 27, 28, 122, 256, 270, 307, vol. ii. pp. 115, 116), I may refer to the testimony of M. Humboldt, the only traveller in the New World who has possessed a competent amount of physical as well as historical knowledge. *Humboldt, Nouvelle Espagne*, vol. ii. p. 483, and elsewhere. Compare Mr. Pentland's observations on the tombs in the neighbourhood of Titicaca (*Jour. of Geog. Soc.* vol. x. p. 554) with *M'Culloh's Researches*, pp. 364–366; *Mexique par Larenaudière*, pp. 41, 42, 66; *Ulloa's South America*, vol. i. pp. 465, 466.

[207] 'The members of the royal house, the great nobles, even the public functionaries, and the numerous body of the priesthood, were all exempt from taxation. The whole duty of defraying the expenses of the government belonged to the people.' *Prescott's History of Peru*, vol. i. p. 56.

[208] Ondegardo emphatically says, 'Solo el trabajo de las personas era el tributo que se dava, porque ellos no poseian otra cosa.' *Prescott's Peru*, vol. i. p. 57. Compare *M'Culloh's Researches*, p. 359. In Mexico the state of things was just the same: 'Le petit peuple, qui ne possédait point de biens-fonds, et qui ne faisait point de commerce, payait sa part des taxes en travaux de différents genres; c'était par lui que les terres de la couronne étaient cultivées, les ouvrages publics exécutés, et les diverses maisons appartenantes à l'empereur construites ou entretenues.' *Larenaudière's Mexique*, p. 39.

controlled. The people were so shackled, that they could neither change their residence, nor alter their clothes, without permission from the governing powers To each man the law prescribed the trade he was to follow, the dress he was to wear, the wife he was to marry, and the amusements he was to enjoy.[209] Among the Mexicans the course of affairs was similar; the same physical conditions being followed by the same social results. In the most essential particular for which history can be studied, namely, the state of the people, Mexico and Peru are the counterpart of each other. For though there were many minor points of difference,[210] both were agreed in this, that there were only two classes – the upper class being tyrants, and the lower class being slaves. This was the state in which Mexico was found when it was discovered by the Europeans,[211] and towards which it must have been tending from the earliest period. And so insupportable had all this become, that we know, from the most decisive evidence, that the general disaffection it produced among the people was one of the causes which, by facilitating the progress of the Spanish invaders, hastened the downfall of the Mexican empire.[212]

The further this examination is carried, the more striking becomes the similarity between those civilizations which flourished anterior to what may be called the European epoch of the human mind. The division of a nation into castes would be impossible in the great European countries; but it existed from a remote antiquity in Egypt, in India, and apparently in Persia.[213] The very same institution was rigidly enforced in Peru;[214] and what proves how consonant it was to that stage of society, is, that in Mexico, where castes were not established by law, it was nevertheless a recognised custom that the son should follow the occupation of his father.[215] This was the political symptom of that stationary and conservative spirit, which, as we shall hereafter see, has marked every country in which the upper classes have monopolized power. The religious symptom of the same spirit was displayed in that inordinate reverence for antiquity, and in that hatred of change, which the greatest of all the writers on America has well pointed out as an analogy between the natives of Mexico and those of Hindostan.[216]

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[209] Mr. Prescott notices this with surprise, though, under the circumstances, it was in truth perfectly natural. He says (*Hist. of Peru*, vol. i. p. 159), 'Under this extraordinary polity, a people, advanced in many of the social refinements, well skilled in manufactures and agriculture, were unacquainted, as we have seen, with money. They had nothing that deserved to be called property. They could follow no craft, could engage in no labour, no amusement, but such as was specially provided by law. They could not change their residence or their dress without a licence from the government. They could not even exercise the freedom which is conceded to the most abject in other countries – that of selecting their own wives.'

[210] The Mexicans being, as Prichard says (*Physical History*, vol. v. p. 467), of a more cruel disposition than the Peruvians; but our information is too limited to enable us to determine whether this was mainly owing to physical causes or to social ones. Herder preferred the Peruvian civilization: 'der gebildetste Staat dieses Welttheils, Peru.' *Ideen zur Geschichte der Menschheit*, vol. i. p. 33.

[211] See in *Humboldt's Nouvelle Espagne*, vol. i. p. 101, a striking summary of the state of the Mexican people at the time of the Spanish Conquest: see also *History of America*, book vii., in *Robertson's Works*, p. 907.

[212] *Prescott's History of the Conquest of Mexico*, vol. i. p. 34. Compare a similar remark on the invasion of Egypt in *Bunsen's Egypt*, vol. ii. p. 414.

[213] That there were castes in Persia is stated by Firdousi; and his assertion, putting aside its general probability, ought to outweigh the silence of the Greek historians, who, for the most part, knew little of any country except their own. According to Malcolm, the existence of caste in the time of Jemsheed, is confirmed by some 'Mahomedan authors;' but he does not say who they were. *Malcolm's History of Persia*, vol. i. pp. 505, 506. Several attempts have been made, but very unsuccessfully, to ascertain the period in which castes were first instituted. Compare *Asiatic Researches*, vol. vi. p. 251; Heeren's *African Nations*, vol. ii. p. 121; *Bunsen's Egypt*, vol. ii. p. 410; *Rammohun Roy on the Veds*, p. 269.

[214] *Prescott's History of Peru*, vol. i. pp. 143, 156.

[215] *Prescott's History of Mexico*, vol. i. p. 124.

[216] 'Les Américains, comme les habitans de l'Indoustan, et comme tous les peuples qui ont gémi long-temps sous le despotisme civil et religieux, tiennent avec une opiniâtreté extraordinaire à leurs habitudes, à leurs mœurs, à leurs opinions… Au Mexique, comme dans l'Indoustan, il n'étoit pas permis aux fidèles de changer la moindre chose aux figures des idoles. Tout ce qui appartenoit au rite des Aztèques et des Hindous étoit assujéti à des lois immuables.' *Humboldt*, *Nouv. Espagne*, vol. i. pp. 95, 97. Turgot (*Œuvres*, vol. ii. pp. 226, 313, 314) has some admirable remarks on this fixity of opinion natural to certain states of society. See also *Herder's Ideen zur Geschichte*, vol. iii. pp. 34, 35; and for other illustrations of this unpliancy of thought, and adherence to old customs, which many writers suppose to be an eastern peculiarity but which is far more widely spread, and is, as Humboldt clearly saw, the result of an unequal distribution of power, compare *Turner's Embassy to Tibet*, p. 41; *Forbes's Oriental Memoirs*, vol. i. pp. 15, 164, vol. ii. p. 236; *Mill's History of India*, vol. ii. p. 214; *Elphinstone's History of India*, p. 48; *Otter's Life of Clarke*, vol. ii. p. 109; *Transac. of Asiatic Society*, vol. ii. p. 64; *Journal of Asiat. Society*, vol. viii. p. 116.

To this may be added, that those who have studied the history of the ancient Egyptians, have observed among that people a similar tendency. Wilkinson, who is well known to have paid great attention to their monuments, says that they were more unwilling than any other nation to alter their religious worship;[217] and Herodotus, who travelled in their country two thousand three hundred years ago, assures us that, while they preserved old customs, they never acquired new ones.[218] In another point of view, the similarity between these distant countries is equally interesting, since it evidently arises from the causes already noticed as common to both. In Mexico and Peru, the lower classes being at the disposal of the upper, there followed that frivolous waste of labour which we have observed in Egypt, and evidence of which may also be seen in the remains of those temples and palaces which are still found in several parts of Asia. Both Mexicans and Peruvians erected immense buildings, which were as useless as those of Egypt, and which no country could produce, unless the labour of the people were ill-paid and ill directed.[219] The cost of these monuments of vanity is unknown; but it must have been enormous; since the Americans, being ignorant of the use of iron,[220] were unable to employ a resource by which, in the construction of large works, labour is greatly abridged. Some particulars, however, have been preserved, from which an idea may be formed on this subject. To take, for instance, the palaces of their kings: we find that in Peru, the erection of the royal residence occupied, during fifty years, 20,000 men;[221] while that of Mexico cost the labour of no less than 200,000: striking facts, which, if all other testimonies had perished, would enable us to appreciate the condition of countries in which, for such insignificant purposes, such vast power was expended.[222]

The preceding evidence, collected from sources of unquestioned credibility, proves the force of those great physical laws, which, in the most flourishing countries out of Europe, encouraged the accumulation of wealth, but prevented its dispersion; and thus secured to the upper classes a monopoly of one of the most important elements of social and political power. The result was, that in all those civilizations the great body of the people derived no benefit from the national improvements; hence, the basis of the progress being very narrow, the progress itself was very insecure.[223] When, therefore, unfavourable circumstances arose from without, it was but natural that the whole system should fall to the ground. In such countries, society, being divided against itself, was unable to stand. And there can be no doubt that long before the crisis of their actual destruction, these one-sided and irregular

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[217] 'How scrupulous the Egyptians were, above all people, in permitting the introduction of new customs in matters relating to the gods.' *Wilkinson's Ancient Egyptians*, vol. iii. p. 262. Compare p. 275. Thus, too, M. Bunsen notices the 'tenacity with which the Egyptians adhered to old manners and customs.' *Bunsen's Egypt*, vol. ii. p. 64. See also some remarks on the difference between this spirit and the love of novelty among the Greeks, in *Ritter's History of Ancient Philosophy*, vol. iv. pp. 625, 626.

[218] *Herodot.* book ii. chap. 79: πατρίοισι δὲ χρεώμενοι νόμοισι, ἕλλον οὐδέα ἐιτέωνται: and see the note in *Baehr*, vol. i. p. 660: 'νόμους priores interpretes explicarunt *cantilenas*, *hymnos*; Schweighæuserus rectius intellexit *instituta ac mores*.' In the same way, in Timæus, Plato represents an Egyptian priest saying to Solon, Ἕλληνες ἀεὶ παῖδές ἐστε, γέρων δὲ Ἕλλην οὐκ ἔστιν. And when Solon asked what he meant, Νέοι ἐστε, was the reply, τὰς ψυχὰς πάντες· οὐδεμίαν γὰρ ἐν αὐταῖς ἔχετε δι ἀρχαίαν ἀκοὴν πολιὸν δόξαν οὐδὲ μάθημα χρόνῳ πολιὸν οὐδέν. Chap. v. in *Platonis Opera*, vol. vii. p. 242, edit. Bekker, Lond. 1826.

[219] The Mexicans appear to have been even more wantonly prodigal than the Peruvians. See, respecting their immense pyramids, one of which, Cholula had a base 'twice as broad as the largest Egyptian pyramid,' *M'Culloh's Researches*, pp. 252–256; *Bullock's Mexico*, pp. 111–115, 414; *Humboldt's Nouvelle Espagne*, vol. i. pp. 240, 241.

[220] *Prescott's History of Mexico*, vol. i. p. 117, vol. iii. p. 341; and *Prescott's History of Peru*, vol. i. p. 145. See also *Haüy*, *Traité de Minéralogie*, Paris, 1801, vol. iv. p. 372.

[221] *Prescott's History of Peru*, vol. i. p. 18.

[222] Mr. Prescott (*History of Mexico*, vol. i. p. 153) says, 'We are not informed of the time occupied in building this palace; but 200,000 workmen, it is said, were employed on it. However this may be, it is certain that the Tezcucan monarchs, like those of Asia and ancient Egypt, had the control of immense masses of men, and would sometimes turn the whole population of a conquered city, including the women, into the public works. The most gigantic monuments of architecture which the world has witnessed would never have been reared by the hands of freemen.' The Mexican historian, Ixtlilxochitl, gives a curious account of one of the royal palaces. See his *Histoire de Chichiméques*, translated by Ternaux-Compans, Paris, 1840, vol. i. pp. 257–262, chap. xxxvii.

[223] This may be illustrated by a good remark of M. Matter, to the effect that when the Egyptians had once lost their race of kings, it was found impossible for the nation to reconstruct itself. *Matter*, *Histoire de l'Ecole d'Alexandrie*, vol. i. p. 68; a striking passage. In Persia, again, when the feeling of loyalty decayed, so also did the feeling of national power. *Malcolm's History of Persia*, vol. ii. p. 130. The history of the most civilized parts of Europe presents a picture exactly the reverse of this.

civilizations had begun to decay; so that their own degeneracy aided the progress of foreign invaders, and secured the overthrow of those ancient kingdoms, which, under a sounder system, might have been easily saved.

Thus far as to the way in which the great civilizations exterior to Europe have been affected by the peculiarities of their food, climate, and soil. It now remains for me to examine the effect of those other physical agents to which I have given the collective name of Aspects of Nature, and which will be found suggestive of some very wide and comprehensive inquiries into the influence exercised by the external world in predisposing men to certain habits of thought, and thus giving a particular tone to religion, arts, literature, and, in a word, to all the principal manifestations of the human mind. To ascertain how this is brought about, forms a necessary supplement to the investigations just concluded. For, as we have seen that climate, food, and soil mainly concern the accumulation and distribution of wealth, so also shall we see that the Aspects of Nature concern the accumulation and distribution of thought. In the first case, we have to do with the material interests of Man; in the other case with his intellectual interests. The former I have analyzed as far as I am able, and perhaps as far as the existing state of knowledge will allow.[224] But the other, namely, the relation between the Aspects of Nature and the mind of Man, involves speculations of such magnitude, and requires such a mass of materials drawn from every quarter, that I feel very apprehensive as to the result; and I need hardly say, that I make no pretensions to anything approaching an exhaustive analysis, nor can I hope to do more than generalize a few of the laws of that complicated, but as yet unexplored, process by which the external world has affected the human mind, has warped its natural movements, and too often checked its natural progress.

The Aspects of Nature, when considered from this point of view, are divisible into two classes: the first class being those which are most likely to excite the imagination; and the other class being those which address themselves to the understanding commonly so called, that is, to the mere logical operations of the intellect. For although it is true that, in a complete and well-balanced mind, the imagination and the understanding each play their respective parts, and are auxiliary to each other, it is also true that, in a majority of instances, the understanding is too weak to curb the imagination and restrain its dangerous licence. The tendency of advancing civilization is to remedy this disproportion, and invest the reasoning powers with that authority, which, in an early stage of Society, the imagination exclusively possesses. Whether or not there is ground for fearing that the reaction will eventually proceed too far, and that the reasoning faculties will in their turn tyrannize over the imaginative ones, is a question of the deepest interest; but, in the present condition of our knowledge, it is probably an insoluble one. At all events, it is certain that nothing like such a state has yet been seen; since, even in this age, when the imagination is more under control than in any preceding one, it has far too much power; as might be easily proved, not only from the superstitions which in every country still prevail among the vulgar, but also from that poetic reverence for antiquity, which, though it has been long diminishing, still hampers the independence, blinds the judgment, and circumscribes the originality of the educated classes.

Now, so far as natural phenomena are concerned, it is evident, that whatever inspires feelings of terror, or of great wonder, and whatever excites in the mind an idea of the vague and uncontrollable, has a special tendency to inflame the imagination, and bring under its dominion the slower and more deliberate operations of the understanding. In such cases, Man, contrasting himself with the force and majesty of Nature, becomes painfully conscious of his own insignificance. A sense of inferiority steals over him. From every quarter innumerable obstacles hem him in, and limit his individual will. His mind, appalled by the indefined and indefinable, hardly cares to scrutinize the details of which

[224] I mean in regard to the physical and economical generalizations. As to the literature of the subject, I am conscious of many deficiencies, particularly in respect to the Mexican and Peruvian histories.

such imposing grandeur consists.[225] On the other hand, where the works of Nature are small and feeble, Man regains confidence; he seems more able to rely on his own power; he can, as it were, pass through and exercise authority in every direction. And as the phenomena are more accessible, it becomes easier for him to experiment on them, or to observe them with minuteness; an inquisitive and analytic spirit is encouraged, and he is tempted to generalize the appearances of Nature, and refer them to the laws by which they are governed.

Looking in this way at the human mind as affected by the Aspects of Nature, it is surely a remarkable fact, that all the great early civilizations were situated within and immediately adjoining the tropics, where those aspects are most sublime, most terrible, and where Nature is, in every respect, most dangerous to Man. Indeed, generally, in Asia, Africa, and America, the external world is more formidable than in Europe. This holds good not only of the fixed and permanent phenomena, such as mountains, and other great natural barriers, but also of occasional phenomena, such as earthquakes, tempests, hurricanes, pestilences; all of which are in those regions very frequent and very disastrous. These constant and serious dangers produce effects analogous to those caused by the sublimity of Nature, in so far, that in both cases there is a tendency to increase the activity of the imagination. For the peculiar province of the imagination being to deal with the unknown, every event which is unexplained, as well as important, is a direct stimulus to our imaginative faculties. In the tropics, events of this kind are more numerous than elsewhere; it therefore follows that in the tropics the imagination is most likely to triumph. A few illustrations of the working of this principle will place it in a clearer light, and will prepare the reader for the arguments based upon it.

Of those physical events which increase the insecurity of Man, earthquakes are certainly among the most striking, in regard to the loss of life which they cause, as also in regard to their sudden and unexpected occurrence. There is reason to believe that they are always preceded by atmospheric changes which strike immediately at the nervous system, and thus have a direct physical tendency to impair the intellectual powers.[226] However this may be, there can be no doubt as to the effect they produce in encouraging particular associations and habits of thought. The terror which they inspire excites the imagination even to a painful extent, and, overbalancing the judgment, predisposes men to superstitious fancies. And what is highly curious, is, that repetition, so far from blunting such feelings, strengthens them. In Peru, where earthquakes appear to be more common than in any other country,[227] every succeeding visitation increases the general dismay; so that, in some cases, the fear becomes almost insupportable.[228] The mind is thus constantly thrown into a timid and anxious state:

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[225] The sensation of fear, even when there is no danger, becomes strong enough to destroy the pleasure that would otherwise be felt. See, for instance, a description of the great mountain boundary of Hindostan, in *Asiatic Researches*, vol. xi. p. 469: 'It is necessary for a person to place himself in our situation before he can form a just conception of the scene. The depth of the valley below, the progressive elevation of the intermediate hills, and the majestic splendour of the cloud-capped Himalaya, formed so grand a picture, that the mind was impressed with a sensation of dread rather than of pleasure.' Compare vol. xiv. p. 116, Calcutta, 1822. In the Tyrol, it has been observed, that the grandeur of the mountain scenery imbues the minds of the natives with fear, and has caused the invention of many superstitious legends. *Alison's Europe*, vol. ix. pp. 79, 80.

[226] 'Une augmentation d'électricité s'y manifeste aussi presque toujours, et ils sont généralement annoncés par le mugissement des bestiaux, par l'inquiétude des animaux domestiques, et dans les hommes par cette sorte de malaise qui, en Europe, précède les orages dans les personnes nerveuses.' *Cuvier*, *Prog. des Sciences*, vol. i. p. 265. See also, on this 'Vorgefühl,' the observation of Von Hoff, in Mr. Mallet's valuable essay on earthquakes (*Brit. Assoc. for* 1850, p. 68); and the 'foreboding' in *Tschudi's Peru*, p. 165; and a letter in *Nichols's Illustrations of the Eighteenth Century*, vol. iv. p. 504. The probable connexion between earthquakes and electricity is noticed in *Bakewell's Geology*, p. 434.

[227] 'Peru is more subject perhaps than any other country to the tremendous visitation of earthquakes.' *M'Culloch's Geog. Dict.* 1849. vol. ii. p. 499. Dr. Tschudi (*Travels in Peru*, p. 162) says of Lima, 'at an average forty-five shocks may be counted on in the year.' See also on the Peruvian earthquakes, pp. 43, 75, 87, 90.

[228] A curious instance of association of ideas conquering the deadening effect of habit. Dr. Tschudi (*Peru*, p. 170), describing the panic, says, 'no familiarity with the phenomenon can blunt this feeling.' Beale (*South-Sea Whaling Voyage*, Lond. 1839, p. 205) writes, 'it is said at Peru, that the oftener the natives of the place feel those vibrations of the earth, instead of becoming habituated to them, as persons do who are constantly exposed to other dangers, they become more filled with dismay every time the shock is repeated, so that aged people often find the terror a slight shock will produce almost insupportable.' Compare *Darwin's Journal*, pp. 422, 423. So, too, in regard to Mexican earthquakes, Mr. Ward observes, that 'the natives are both more sensible than strangers of the smaller

and men witnessing the most serious dangers, which they can neither avoid nor understand, become impressed with a conviction of their own inability, and of the poverty of their own resources.[229] In exactly the same proportion, the imagination is aroused, and a belief in supernatural interference actively encouraged. Human power failing, superhuman power is called in; the mysterious and the invisible are believed to be present; and there grow up among the people those feelings of awe and of helplessness, on which all superstition is based, and without which no superstition can exist.[230]

Further illustration of this may be found even in Europe, where such phenomena are, comparatively speaking, extremely rare. Earthquakes and volcanic eruptions are more frequent and more destructive in Italy, and in the Spanish and Portuguese peninsula, than in any other of the great countries; and it is precisely there that superstition is most rife, and the superstitious classes most powerful. Those were the countries where the clergy first established their authority, where the worst corruptions of Christianity took place, and where superstition has during the longest period retained the firmest hold. To this may be added another circumstance, indicative of the connexion between these physical phenomena and the predominance of the imagination. Speaking generally, the fine arts are addressed more to the imagination; the sciences to the intellect.[231] Now it is remarkable, that all the greatest painters, and nearly all the greatest sculptors, modern Europe has possessed, have been produced by the Italian and Spanish peninsulas. In regard to science, Italy has no doubt had several men of conspicuous ability; but their numbers are out of all proportion small when compared with her artists and poets. As to Spain and Portugal, the literature of those two countries is eminently poetic, and from their schools have proceeded some of the greatest painters the world has ever seen. On the other hand, the purely reasoning faculties have been neglected, and the whole Peninsula, from the earliest period to the present time, does not supply to the history of the natural sciences a single name of the highest merit; not one man whose works form an epoch in the progress of European knowledge.[232]

The manner in which the Aspects of Nature, when they are very threatening, stimulate the imagination,[233] and by encouraging superstition discourage knowledge, may be made still more apparent by one or two additional facts. Among an ignorant people, there is a direct tendency to ascribe all serious dangers to supernatural intervention; and a strong religious sentiment being thus aroused,[234] it constantly happens, not only that the danger is submitted to, but that it is actually

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shocks, and more alarmed by them.' *Ward's Mexico*, vol. ii. p. 55. On the physiological effects of the fear caused by earthquakes, see the remarkable statement by Osiander in *Burdach's Physiologie comme Science d'Observation*, vol. ii. pp. 223, 224. That the fear should be not deadened by familiarity, but increased by it, would hardly be expected by speculative reasoners unacquainted with the evidence; and we find, in fact, that the Pyrrhonists asserted that οὸ γοῦν σεισμὰ παρ' οὗς συνεχῶς ἀποτελοῦνται, οὐ θαυμάζοντο· οὐδ' ὁ ἥλιος, ὅτι καθ' ἡμέραν ὁράει. *Diog. Laert. de Vitis Philos.* lib. ix. segm. 87, vol. i. p. 591.

[229] Mr. Stephens, who gives a striking description of an earthquake in Central America, emphatically says, 'I never felt myself so feeble a thing before.' *Stephens's Central America*, vol. i. p. 383. See also the account of the effects produced on the mind by an earthquake, in *Transac. of Soc. of Bombay*, vol. iii. p. 98, and the note at p. 105.

[230] The effect of earthquakes in encouraging superstition, is noticed in Lyell's admirable work, *Principles of Geology*, p. 492. Compare a myth on the origin of earthquakes in *Beausobre*, *Histoire Critique de Manichée*, vol. i. p. 243.

[231] The greatest men in science, and in fact all very great men, have no doubt been remarkable for the powers of their imagination. But in art the imagination plays a far more conspicuous part than in science; and this is what I mean to express by the proposition in the text. Sir David Brewster, indeed, thinks that Newton was deficient in imagination: 'the weakness of his imaginative powers.' *Brewster's Life of Newton*, 1855, vol. ii. p. 133. It is impossible to discuss so large a question in a note; but to my apprehension, no poet, except Dante and Shakespeare, ever had an imagination more soaring and more audacious than that possessed by Sir Isaac Newton.

[232] The remarks made by Mr. Ticknor on the absence of science in Spain, might be extended even further than he has done. See *Ticknor's History of Spanish Literature*, vol. iii. pp. 222, 223. He says, p. 237, that in 1771, the University of Salamanca being urged to teach the physical sciences, replied, 'Newton teaches nothing that would make a good logician or metaphysician, and Gassendi and Descartes do not agree so well with revealed truth as Aristotle does.'

[233] In *Asiatic Researches*, vol. vi. pp. 35, 36, there is a good instance of an earthquake giving rise to a theological fiction. See also vol. i. pp. 154–157; and compare *Coleman's Mythology of the Hindus*, p. 17.

[234] See for example, *Asiatic Researches*, vol. iv. pp. 56, 57, vol. vii. p. 94; and the effect produced by a volcano, in *Journal of Geograph. Society*, vol. v. p. 388. See also vol. xx. p. 8, and a practical recognition of the principle by Sextus Empiricus, in *Tennemann's Geschichte der Philosophie*, vol. i. p. 292. Compare the use the clergy made of a volcanic eruption in Iceland (*Wheaton's History of*

worshipped. This is the case with some of the Hindus in the forest of Malabar;[235] and many similar instances will occur to whoever has studied the condition of barbarous tribes.[236] Indeed, so far is this carried, that in some countries the inhabitants, from feelings of reverential fear, refuse to destroy wild-beasts and noxious reptiles; the mischief these animals inflict being the cause of the impunity they enjoy.[237]

It is in this way, that the old tropical civilizations had to struggle with innumerable difficulties unknown to the temperate zone, where European civilization has long flourished. The devastations of animals hostile to man, the ravages of hurricanes, tempests, earthquakes,[238] and similar perils, constantly pressed upon them, and affected the tone of their national character. For the mere loss of life was the smallest part of the inconvenience. The real mischief was, that there were engendered in the mind, associations which made the imagination predominate over the understanding; which infused into the people a spirit of reverence instead of a spirit of inquiry; and which encouraged a disposition to neglect the investigation of natural causes, and ascribe events to the operation of supernatural ones.

Everything we know of those countries proves how active this tendency must have been. With extremely few exceptions, health is more precarious, and disease more common, in tropical climates than in temperate ones. Now, it has been often observed, and indeed is very obvious, that the fear of death makes men more prone to seek supernatural aid than they would otherwise be. So complete is our ignorance respecting another life, that it is no wonder if even the stoutest heart should quail at the sudden approach of that dark and untried future. On this subject the reason is perfectly silent; the imagination, therefore, is uncontrolled. The operation of natural causes being brought to an end, supernatural causes are supposed to begin. Hence it is, that whatever increases in any country the amount of dangerous disease, has an immediate tendency to strengthen superstition, and aggrandize the imagination at the expense of the understanding. This principle is so universal, that, in every part of the world, the vulgar ascribe to the intervention of the Deity those diseases which are peculiarly fatal, and especially those which have a sudden and mysterious appearance. In Europe it used to be believed that every pestilence was a manifestation of the divine anger;[239] and this opinion, though it

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the Northmen, p. 42); and see further *Raffles' History of Java*, vol. i. pp. 29, 274, and *Tschudi's Peru*, pp. 64, 167, 171.

[235] The Hindus in the Iruari forests, says Mr. Edye, 'worship and respect everything from which they apprehend danger.' *Edye on the Coast of Malabar*, in *Journal of Asiatic Society*, vol. ii. p. 337.

[236] Dr. Prichard (*Physical History*, vol. iv. p. 501) says 'The tiger is worshipped by the Hajin tribe in the vicinity of the Garrows or Garrudus.' Compare *Transactions of Asiatic Society*, vol. iii. p. 66. Among the Garrows themselves, this feeling is so strong, that 'the tiger's nose strung round a woman's neck is considered as a great preservative in childbirth.' *Coleman's Mythology of the Hindus*, p. 321. The Seiks have a curious superstition respecting wounds inflicted by tigers (*Burne's Bokhara*, 1834, vol. iii. p. 140); and the Malasir believe that these animals are sent as a punishment for irreligion. *Buchanan's Journey through the Mysore*, vol. ii. p. 385.

[237] The inhabitants of Sumatra are, for superstitious reasons, most unwilling to destroy tigers, though they commit frightful ravages. *Marsden's History of Sumatra*, pp. 149, 254. The Russian account of the Kamtschatkans says, 'besides the above-mentioned gods, they pay a religious regard to several animals from which they apprehend danger.'*Grieve's History of Kamtschatka*, p. 205. Bruce mentions that in Abyssinia, hyænas are considered 'enchanters' and the inhabitants 'will not touch the skin of a hyæna till it has been prayed over and exorcised by a priest.' *Murray's Life of Bruce*, p. 472. Allied to this, is the respect paid to bears (*Erman's Siberia*, vol. i. p. 492, vol. ii. pp. 42, 43); also the extensively-diffused worship of the serpent, whose wily movements are well calculated to inspire fear, and therefore rouse the religious feelings. The danger apprehended from noxious reptiles is connected with the Dews of the Zendavesta. See *Matter's Histoire du Gnosticisme*, vol. i. p. 380, Paris, 1828.

[238] To give one instance of the extent to which these operate, it may be mentioned, that in 1815 an earthquake and volcanic eruption broke forth in Sumbawa, which shook the ground 'through an area of 1,000 miles in circumference,' and the detonations of which were heard at a distance of 970 geographical miles. *Somerville's Connexion of the Physical Sciences*, p. 283; *Hitchcock's Religion of Geology*, p. 190; *Low's Sarawak*, p. 10; *Bakewell's Geology*, p. 438.

[239] In the sixteenth century, 'Les différentes sectes s'accordèrent néanmoins à regarder les maladies graves et dangereuses comme un effet immédiat de la puissance divine; idée que Fernel contribua encore à répandre davantage. On trouve dans Paré plusieurs passages de la Bible, cités pour prouver que la colère de Dieu est la seule cause de la peste, qu'elle suffit pour provoquer ce fléau, et que sans elle les causes éloignées ne sauraient agir.' *Sprengel*, *Histoire de la Médecine*, vol. iii. p. 112. The same learned writer says of the Middle Ages (vol. ii. p. 372), 'D'après l'esprit généralement répandu dans ces siècles de barbarie, on croyait la lèpre envoyée d'une manière immédiate par Dieu.' See also pp. 145, 346, 431. Bishop Heber says that the Hindus deprive lepers of caste and of the right of possessing property, because they are objects of 'Heaven's wrath.' *Heber's Journey through India*, vol. ii. p. 330. On the

has long been dying away, is by no means extinct, even in the most civilized countries.[240] Superstition of this kind will of course be strongest, either where medical knowledge is most backward, or where disease is most abundant. In countries where both these conditions are fulfilled, the superstition is supreme; and even where only one of the conditions exists, the tendency is so irresistible, that, I believe, there are no barbarous people who do not ascribe to their good or evil deities, not only extraordinary diseases, but even many of the ordinary ones to which they are liable.[241]

Here, then, we have another specimen of the unfavourable influence, which, in the old civilizations, external phenomena exercised over the human mind. For those parts of Asia where the highest refinement was reached, are, from various physical causes, much more unhealthy than the most civilized parts of Europe.[242] This fact alone must have produced a considerable effect on the

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Jewish opinion, see *Le Clerc*, *Bibliothèque Universelle*, vol. iv. p. 402, Amsterdam, 1702. And as to the early Christians, see *Maury*, *Légendes Pieuses*, p. 68, Paris, 1843: though M. Maury ascribes to 'les idées orientales reçues par le christianisme,' what is due to the operation of a much wider principle.

[240] Under the influence of the inductive philosophy, the theological theory of disease was seriously weakened before the middle of the seventeenth century; and by the middle, or at all events the latter half, of the eighteenth century, it had lost all its partisans among scientific men. At present it still lingers on among the vulgar; and traces of it may be found in the writings of the clergy, and in the works of other persons little acquainted with physical knowledge. When the cholera broke out in England, attempts were made to revive the old notion; but the spirit of the age was too strong for such efforts to succeed; and it may be safely predicted that men will never return to their former opinions, unless they first return to their former ignorance. As a specimen of the ideas which the cholera tended to excite, and of their antagonism to all scientific investigation, I may refer to a letter written in 1832 by Mrs. Grant, a woman of some accomplishments, and not devoid of influence (*Correspondence of Mrs. Grant*, London, 1844, vol. iii. pp. 216, 217), where she states that 'it appears to me great presumption to indulge so much as people do in speculation and conjecture about a disease so evidently a peculiar infliction, and different from all other modes of suffering hitherto known.' This desire to limit human speculation is precisely the feeling which long retained Europe in darkness; since it effectually prevented those free inquiries to which we are indebted for all the real knowledge we possess. The doubts of Boyle upon this subject supply a curious instance of the transitory state through which the mind was passing in the seventeenth century, and by which the way was prepared for the great liberating movement of the next age. Boyle, after stating both sides of the question, namely, the theological and the scientific, adds, 'and it is the less likely that these sweeping and contagious maladies should be always sent for the punishment of impious men, because I remember to have read in good authors, that as some plagues destroyed both men and beasts, so some other did peculiarly destroy brute animals of very little consideration or use to men, as cats,' &c.'Upon these and the like reasons, I have sometimes suspected that in the controversy about the origin of the plague, namely, whether it be natural or supernatural, neither of the contending parties is altogether in the right; since it is very possible that some pestilences may not break forth without an extraordinary, though perhaps not immediate, interposition of Almighty God, provoked by the sins of men; and yet other plagues may be produced by a tragical concourse of merely natural causes.' *Discourse on the Air*, in *Boyle's Works*, vol. iv. pp. 288, 289. '*Neither of the contending parties is altogether in the right!*' – an instructive passage towards understanding the compromising spirit of the seventeenth century; standing midway, as it did, between the credulity of the sixteenth, and the scepticism of the eighteenth.

[241] To the historian of the human mind, the whole question is so full of interest, that I shall refer in this note to all the evidence I have been able to collect: and whoever will compare the following passages may satisfy himself that there is in every part of the world an intimate relation between ignorance respecting the nature and proper treatment of a disease, and the belief that such disease is caused by supernatural power, and is to be cured by it. *Burton's Sindh*, p. 146, London, 1851; *Ellis's Polynesian Researches*, vol. i. p. 395, vol. iii. pp. 36, 41, vol. iv. pp. 293, 334, 375; *Cullen's Works*, Edinb. 1827, vol. ii. pp. 414, 434; *Esquirol*, *Maladies Mentales*, vol. i. pp. 274, 482; *Cabanis*, *Rapports du Physique et du Moral*, p. 277; *Volney*, *Voyage en Syrie*, vol. i. p. 426; *Turner's Embassy to Tibet*, p. 104; *Syme's Embassy to Ava*, vol. ii. p. 211; *Ellis's Tour through Hawaii*, pp. 282, 283, 332, 333; *Renouard*, *Histoire de la Médecine*, vol. i. p. 398; *Broussais*, *Examen des Doctrines Médicales*, vol. i. pp. 261, 262; *Grote's History of Greece*, vol. i. p. 485 (compare p. 251, and vol. vi. p. 213); *Grieve's History of Kamtschatka*, p. 217; *Journal of Statist. Soc.* vol. x. p. 10; *Buchanan's North American Indians*, pp. 256, 257; *Halkett's North American Indians*, pp. 36, 37, 388, 393, 394; *Catlin's North American Indians*, vol. i. pp. 35–41; *Briggs on the Aboriginal Tribes of India*, in *Report of Brit. Assoc. for 1850*, p. 172; *Transactions of Soc. of Bombay*, vol. ii. p. 30; *Percival's Ceylon*, p. 201; *Buchanan's Journey through the Mysore*, vol. ii. pp. 27, 152, 286, 528, vol. iii. pp. 23, 188, 253 (so, too, M. Geoffroy Saint Hilaire, *Anomalies de l'Organization*, vol. iii. p. 380, says that when we were quite ignorant of the cause of monstrous births, the phenomenon was ascribed to the Deity, – 'de là aussi l'intervention supposée de la divinité;' and for an exact verification of this, compare *Burdach*, *Traité de Physiologie*, vol. ii. p. 247, with *Journal of Geog. Soc.* vol. xvi. p. 113); *Ellis's History of Madagascar*, vol. i. pp. 224, 225; *Prichard's Physical History*, vol. i. p. 207, vol. v. p. 492; *Journal of Asiatic Society*, vol. iii. p. 230, vol. iv. p. 158; *Asiatic Researches*, vol. iii. pp. 29, 156, vol. iv. pp. 56, 58, 74, vol. xvi. pp. 215, 280; *Neander's History of the Church*, vol. iii. p. 119; *Crawfurd's History of the Indian Archipelago*, vol. i. p. 328; *Low's Sarawak*, pp. 174, 261; *Cook's Voyages*, vol. i. p. 229; *Mariner's Tonga Islands*, vol. i. pp. 194, 350–360, 374, 438, vol. ii. pp. 172, 230; *Huc's Travels in Tartary and Thibet*, vol. i. pp. 74–77; *Richardson's Travels in the Sahara*, vol. i. p. 27; *M'Culloh's Researches*, p. 105; *Journal of Geog. Soc.* vol. i. p. 41, vol. iv. p. 260, vol. xiv. p. 37. And in regard to Europe, compare *Spence*, *Origin of the Laws of Europe*, p. 322; *Turner's Hist. of England*, vol. iii. p. 443; *Phillips on Scrofula*, p. 255; *Otter's Life of Clarke*, vol. i. pp. 265, 266, which may be illustrated by the 'sacred' disease of Cambyses, no doubt epilepsy; see *Herodot.* lib. iii. chap. xxxiv. vol. ii. p. 63.

[242] Heat, moisture, and consequent rapid decomposition of vegetable matter, are certainly among the causes of this; and to them

national character,[243] and the more so, as it was aided by those other circumstances which I have pointed out, all tending in the same direction. To this may be added, that the great plagues by which Europe has at different periods been scourged, have, for the most part, proceeded from the East, which is their natural birthplace, and where they are most fatal. Indeed, of those cruel diseases now existing in Europe, scarcely one is indigenous; and the worst of them were imported from tropical countries in and after the first century of the Christian era.[244]

Summing up these facts, it may be stated, that in the civilizations exterior to Europe, all nature conspired to increase the authority of the imaginative faculties, and weaken the authority of the reasoning ones. With the materials now existing, it would be possible to follow this vast law to its remotest consequences, and show how in Europe it is opposed by another law diametrically opposite, and by virtue of which the tendency of natural phenomena is, on the whole, to limit the imagination, and embolden the understanding: thus inspiring Man with confidence in his own resources, and facilitating the increase of his knowledge, by encouraging that bold, inquisitive, and scientific spirit, which is constantly advancing, and on which all future progress must depend.

It is not to be supposed that I can trace in detail the way in which, owing to these peculiarities, the civilization of Europe has diverged from all others that preceded it. To do this, would require a learning and a reach of thought to which hardly any single man ought to pretend; since it is one thing to have a perception of a large and general truth, and it is another thing to follow out that truth in all its ramifications, and prove it by such evidence as will satisfy ordinary readers. Those, indeed, who are accustomed to speculations of this character, and are able to discern in the history of man something more than a mere relation of events, will at once understand that in these complicated subjects, the wider any generalization is, the greater will be the chance of apparent exceptions; and that when the theory covers a very large space, the exceptions may be innumerable, and yet the theory remain perfectly accurate. The two fundamental propositions which I hope to have demonstrated, are, 1st, That there are certain natural phenomena which act on the human mind by exciting the imagination; and 2dly, That those phenomena are much more numerous out of Europe than in it. If these two propositions are admitted, it inevitably follows, that in those countries where the imagination has received the stimulus, some specific effects must have been produced; unless, indeed, the effects have been neutralized by other causes. Whether or not there have been antagonistic causes, is immaterial to the truth of the theory, which is based on the two propositions just stated. In a scientific point of view, therefore, the generalization is complete; and it would perhaps be prudent to leave it as it now stands, rather than attempt to confirm it by further illustrations, since all particular facts are liable to be erroneously stated, and are sure to be contradicted by those who dislike the conclusions they corroborate. But in order to familiarize the reader with the principles I have put forward, it does seem advisable that a few instances should be given of their actual working: and I will, therefore, briefly notice the effects they have produced in the three great divisions of Literature, Religion, and Art. In each of these departments, I will endeavour to indicate how the leading features have been affected by the Aspects of Nature; and with a view of simplifying the inquiry, I will take the two most conspicuous instances on each side, and compare the manifestations of the intellect of Greece

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may perhaps be added the electrical state of the atmosphere in the tropics. Compare *Holland's Medical Notes*, p. 477; *M'William's Medical Expedition to the Niger*, pp. 157, 185; *Simon's Pathology*, p. 269; *Forry's Climate and its Endemic Influences*, p. 158. M. Lepelletier says, rather vaguely (*Physiologie Médicale*, vol. iv. p. 527), that the temperate zones are 'favorables à l'exercice complet et régulier des phénomènes vitaux.'

[243] And must have strengthened the power of the clergy; for, as Charlevoix says with great frankness, 'pestilences are the harvests of the ministers of God.' *Southey's History of Brazil*, vol. ii. p. 254.

[244] For evidence of the extra-European origin of European diseases, some of which, such as the small-pox, have passed from epidemics into endemics, compare *Encyclop. of the Medical Sciences*, 4to, 1847, p. 728; *Transactions of Asiatic Society*, vol. ii. pp. 54, 55; *Michaelis on the Laws of Moses*, vol. iii. p. 313; *Sprengel*, *Histoire de la Médecine*, vol. ii. pp. 33, 195; *Wallace's Dissertation on the Numbers of Mankind*, pp. 81, 82; *Huetiana*, Amst. 1723, pp. 132–135; *Sanders on the Small Pox*, Edinb. 1813, pp. 3–4; *Wilks's Hist. of the South of India*, vol. iii. pp. 16–21; *Clot-Bey de la Peste*, Paris, 1840, p. 227.

with those of the intellect of India: these being the two countries respecting which the materials are most ample, and in which the physical contrasts are most striking.

If, then, we look at the ancient literature of India, even during its best period, we shall find the most remarkable evidence of the uncontrolled ascendency of the imagination. In the first place, we have the striking fact that scarcely any attention has been paid to prose composition; all the best writers having devoted themselves to poetry, as being most congenial to the national habits of thought. Their works on grammar, on law, on history, on medicine, on mathematics, on geography, and on metaphysics, are nearly all poems, and are put together according to a regular system of versification.[245] The consequence is, that while prose writing is utterly despised, the art of poetry has been cultivated so assiduously, that the Sanscrit can boast of metres more numerous and more complicated than have ever been possessed by any of the European languages.[246]

This peculiarity in the form of Indian literature is accompanied by a corresponding peculiarity in its spirit. For it is no exaggeration to say, that in that literature every thing is calculated to set the reason of man at open defiance. An imagination, luxuriant even to disease, runs riot on every occasion. This is particularly seen in those productions which are most eminently national, such as the Ramayana, the Mahabharat, and the Puranas in general. But we also find it even in their geographical and chronological systems, which of all others might be supposed least liable to imaginative flights. A few examples of the statements put forward in the most authoritative books, will supply the means of instituting a comparison with the totally opposite condition of the European intellect, and will give the reader some idea of the extent to which credulity can proceed, even among a civilized people.[247]

Of all the various ways in which the imagination has distorted truth, there is none that has worked so much harm as an exaggerated respect for past ages. This reverence for antiquity is repugnant to every maxim of reason, and is merely the indulgence of a poetic sentiment in favour of the remote and unknown. It is, therefore, natural that, in periods when the intellect was comparatively speaking inert, this sentiment should have been far stronger than it now is; and there can be little doubt that it will continue to grow weaker, and that in the same proportion the feeling of progress will gain ground; so that veneration for the past will be succeeded by hope for the future. But formerly the veneration was supreme, and innumerable traces of it may be found in the literature and popular creed of every country. It is this, for instance, which inspired the poets with their notion of a golden age, in which the world was filled with peace, in which evil passions were stilled, and crimes were

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[245] 'So verwandelt das geistige Leben des Hindu sich in wahre Poesie, und das bezeichnende Merkmal seiner ganzen Bildung ist: Herrschaft der Einbildungskraft über den Verstand; im geraden Gegensatz mit der Bildung des Europäers, deren allgemeiner Charakter in der Herrschaft des Verstandes über die Einbildungskraft besteht. Es wird dadurch begreiflich, dass die Literatur der Hindus nur eine poetische ist; dass sie überreich an Dichterwerken, aber arm am wissenschaftlichen Schriften sind; dass ihre heiligen Schriften, ihre Gesetze und Sagen poetisch, und grösstentheils in Versen geschrieben sind; ja dass Lehrbücher der Grammatik, der Heilkunde, der Mathematik und Erdbeschreibung in Versen verfasst sind.' *Rhode*, *Religiöse Bildung der Hindus*, vol. ii. p. 626. Thus, too, we are told respecting one of their most celebrated metaphysical systems, that 'the best text of the Sanchya is a short treatise in verse.' *Colebrooke on the Philosophy of the Hindus*, in *Transactions of Asiatic Society*, vol. i. p. 23. And in another place the same high authority says (*Asiatic Researches*, vol. x. p. 439), 'the metrical treatises on law and other sciences are almost entirely composed in this easy verse.' M. Klaproth, in an analysis of a Sanscrit history of Cashmere, says, 'comme presque toutes les compositions hindoues, il est écrit en vers.' *Journal Asiatique*, I. série, vol. vii. p. 8, Paris, 1825. See also, in vol. vi. pp. 175, 176, the remarks of M. Burnouf: 'Les philosophes indiens, comme s'ils ne pouvaient échapper aux influences poétiques de leur climat, traitent les questions de la métaphysique le plus abstraite par similitudes et métaphores.' Compare vol. vi. p. 4, 'le génie indien si poétique et si religieux;' and see *Cousin*, *Hist. de la Philosophie*, II. série, vol. i. p. 27.

[246] Mr. Yates says of the Hindus, that no other people have ever 'presented an equal variety of poetic compositions. The various metres of Greece and Rome have filled Europe with astonishment; but what are these, compared with the extensive range of Sanscrit metres under its three classes of poetical writing?' *Yates on Sanscrit Alliteration*, in *Asiatic Researches*, vol. xx. p. 159, Calcutta, 1836. See also on the Sanscrit metres, p. 321, and an Essay by Colebrooke, vol. x. pp. 389–474. On the metrical system of the Vedas, see Mr. Wilson's note in the *Rig Veda Sanhita*, vol. ii. p. 135.

[247] In Europe, as we shall see in the sixth chapter of this volume; the credulity was at one time extraordinary; but the age was then barbarous, and barbarism is always credulous. On the other hand, the examples gathered from Indian literature will be taken from the works of a lettered people, written in a language extremely rich, and so highly polished, that some competent judges have declared it equal, if not superior, to the Greek.

unknown. It is this, again, which gave to theologians their idea of the primitive virtue and simplicity of man, and of his subsequent fall from that high estate. And it is this same principle which diffused a belief that in the olden times, men were not only more virtuous and happy, but also physically superior in the structure of their bodies; and that by this means they attained to a larger stature, and lived to a greater age, than is possible for us, their feeble and degenerate descendants.

Opinions of this kind, being adopted by the imagination in spite of the understanding, it follows that the strength of such opinions becomes, in any country, one of the standards by which we may estimate the predominance of the imaginative faculties. Applying this test to the literature of India, we shall find a striking confirmation of the conclusions already drawn. The marvellous feats of antiquity with which the Sanscrit books abound, are so long and so complicated, that it would occupy too much space to give even an outline of them; but there is one class of these singular fictions which is well worth attention, and admits of being briefly stated. I allude to the extraordinary age which man was supposed to have attained in former times. A belief in the longevity of the human race, at an early period of the world, was the natural product of those feelings which ascribed to the ancients an universal superiority over the moderns; and this we see exemplified in some of the Christian, and in many of the Hebrew writings. But the statements in these works are tame and insignificant when compared with what is preserved in the literature of India. On this, as on every subject, the imagination of the Hindus distanced all competition. Thus, among an immense number of similar facts, we find it recorded that in ancient times the duration of the life of common men was 80,000 years,[248] and that holy men lived to be upwards of 100,000.[249] Some died a little sooner, others a little later; but in the most flourishing period of antiquity, if we take all classes together, 100,000 years was the average.[250] Of one king, whose name was Yudhishthir, it is casually mentioned that he reigned 27,000 years;[251] while another, called Alarka, reigned 66,000.[252] They were cut off in their prime, since there are several instances of the early poets living to be about half-a-million.[253] But the most remarkable case is that of a very shining character in Indian history, who united in his single person the functions of a king and a saint. This eminent man lived in a pure and virtuous age, and his days were, indeed, long in the land; since, when he was made king, he was two million years old: he then reigned 6,300,000 years; having done which, he resigned his empire, and lingered on for 100,000 years more.[254]

The same boundless reverence for antiquity made the Hindus refer every thing important to the most distant periods; and they frequently assign a date which is absolutely bewildering.[255] Their great

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[248] 'The limit of life was vol. xvi. p. 456, Calcutta, 1828. 80,000 years.' *Asiatic Researches*. This was likewise the estimate of the Tibetan divines, according to whom men formerly 'parvenaient à l'âge de 80,000 ans.' *Journal Asiatique*, I. série, vol. iii. p. 199, Paris, 1823.

[249] 'Den Hindu macht dieser Widerspruch nicht verlegen, da er seine Heiligen 100,000 Jahre und länger leben lässt.' *Rhode*, *Relig. Bildung der Hindus*, vol. i. p. 175.

[250] In the *Dabistan*, vol. ii. p. 47, it is stated of the earliest inhabitants of the world, that 'the duration of human life in this age extended to one hundred thousand common years.'

[251] Wilford (*Asiatic Researches*, vol. v. p. 242) says, 'When the Puranics speak of the kings of ancient times, they are equally extravagant. According to them, King Yudhishthir reigned seven-and-twenty thousand years.'

[252] 'For sixty thousand and sixty hundred years no other youthful monarch except Alarka reigned over the earth.' *Vishnu Purana*, p. 408.

[253] And sometimes more. In the Essay on Indian Chronology in *Works of Sir W. Jones*, vol. i. p. 325, we hear of 'a conversation between Valmic and Vyasa, … two bards whose ages were separated by a period of 864,000 years.' This passage is also in *Asiatic Researches*, vol. ii. p. 399.

[254] 'He was the first king, first anchoret, and first saint; and is therefore entitled Prathama-Raja, Prathama Bhicshacara, Prathama Jina, and Prathama Tirthancara. At the time of his inauguration as king, his age was 2,000,000 years. He reigned 6,300,000 years, and then resigned his empire to his sons: and having employed 100,000 years in passing through the several stages of austerity and sanctity, departed from this world on the summit of a mountain named Ashtapada.' *Asiatic Researches*, vol. ix. p. 305.

[255] 'Speculationen über Zahlen sind dem Inder so geläufig, dass selbst die Sprache einen Ausdruck hat für eine Unität mit 63 Nullen, nämlich Asanke, eben weil die Berechnung der Weltperioden diese enorme Grössen nothwendig machte, denn jene einfachen 12,000 Jahre schienen einem Volke, welches so gerne die höchstmögliche Potenz auf seine Gottheit übertragen mögte, viel zu geringe

collection of laws, called the *Institutes of Menu*, is certainly less than 3,000 years old; but the Indian chronologists, so far from being satisfied with this, ascribe to them an age that the sober European mind finds a difficulty even in conceiving. According to the best native authorities, these Institutes were revealed to man about two thousand million years before the present era.[256]

All this is but a part of that love of the remote, that straining after the infinite, and that indifference to the present, which characterizes every branch of the Indian intellect. Not only in literature, but also in religion and in art, this tendency is supreme. To subjugate the understanding, and exalt the imagination, is the universal principle. In the dogmas of their theology, in the character of their gods, and even in the forms of their temples, we see how the sublime and threatening aspects of the external world have filled the mind of the people with those images of the grand and the terrible, which they strive to reproduce in a visible form, and to which they owe the leading peculiarities of their national culture.

Our view of this vast process may be made clearer by comparing it with the opposite condition of Greece. In Greece, we see a country altogether the reverse of India. The works of nature, which in India are of startling magnitude, are in Greece far smaller, feebler, and in every way less threatening to man. In the great centre of Asiatic civilization, the energies of the human race are confined, and as it were intimidated, by the surrounding phenomena. Besides the dangers incidental to tropical climates, there are those noble mountains, which seem to touch the sky, and from whose sides are discharged mighty rivers, which no art can divert from their course, and which no bridge has ever been able to span. There, too, are impassable forests, whole countries lined with interminable jungle, and beyond them, again, dreary and boundless deserts; all teaching Man his own feebleness, and his inability to cope with natural forces. Without, and on either side, there are great seas, ravaged by tempests far more destructive than any known in Europe, and of such sudden violence, that it is impossible to guard against their effects. And, as if in those regions every thing combined to cramp the activity of Man, the whole line of coast, from the mouth of the Ganges to the extreme south of the peninsula, does not contain a single safe and capacious harbour, not one port that affords a refuge, which is perhaps more necessary there than in any other part of the world.[257]

But in Greece, the aspects of nature are so entirely different, that the very conditions of existence are changed. Greece, like India, forms a peninsula; but while in the Asiatic country every thing is great and terrible, in the European country every thing is small and feeble. The whole of Greece occupies a space somewhat less than the kingdom of Portugal,[258] that is about a fortieth part of what is now called Hindustan.[259] Situated in the most accessible part of a narrow sea, it had easy contact on the east with Asia Minor, on the west with Italy, on the south with Egypt. Dangers of all kinds were far less numerous than in the tropical civilizations. The climate was more healthy;[260] earthquakes were less frequent; hurricanes were less disastrous; wild-beasts and noxious animals less

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zu seyn.' *Bohlen*, *das alte Indien*, vol. ii. p. 298.

[256] *Elphinstone's History of India*, p. 136, 'a period exceeding 4,320,000 multiplied by six times seventy-one.'

[257] Symes (*Embassy to Ava*, vol. iii. p. 278) says: 'From the mouth of the Ganges to Cape Comorin, the whole range of our continental territory, there is not a single harbour capable of affording shelter to a vessel of 500 tons burden.' Indeed, according to Percival, there is with the exception of Bombay, no harbour, 'either on the Coromandel or Malabar coasts, in which ships can moor in safety at all seasons of the year.' *Percival's Account of Ceylon*, pp. 2, 15, 66.

[258] 'Altogether its area is somewhat less than that of Portugal.' *Grote's History of Greece*, vol. ii. p. 302; and the same remark in *Thirlwall's History of Greece*, vol. i. p. 2, and in *Heeren's Ancient Greece*, 1845, p. 16. M. Heeren says, 'But even if we add all the islands, its square contents are a third less than those of Portugal.'

[259] The area of Hindostan being, according to Mr. M'Culloch (*Geog. Dict.* 1849, vol. i. p. 993), 'between 1,200,000 and 1,300,000 square miles.'

[260] In the best days of Greece, those alarming epidemics, by which the country was subsequently ravaged, were comparatively little known: see *Thirlwall's History of Greece*, vol. iii. p. 134, vol. viii. p. 471. This may be owing to large cosmical causes, or to the simple fact, that the different forms of pestilence had not yet been imported from the East by actual contact. On the vague accounts we possess of the earlier plagues, see *Clot-Bey de la Peste*, Paris, 1840. pp. 21, 46, 184. The relation even of Thucydides is more satisfactory to scholars than to pathologists.

abundant. In regard to the other great features, the same law prevails. The highest mountains in Greece are less than one-third of the Himalaya, so that nowhere do they reach the limit of perpetual snow.[261] As to rivers, not only is there nothing approaching those imposing volumes which are poured down from the mountains of Asia, but nature is so singularly sluggish, that neither in Northern nor in Southern Greece do we find any thing beyond a few streams, which are easily forded, and which, indeed, in the summer season, are frequently dried up.[262]

These striking differences in the material phenomena of the two countries gave rise to corresponding differences in their mental associations. For as all ideas must arise partly from what are called spontaneous operations in the mind, and partly from what is suggested to the mind by the external world, it was natural that so great an alteration in one of the causes should produce an alteration in the effects. The tendency of the surrounding phenomena was in India to inspire fear; in Greece to give confidence. In India Man was intimidated; in Greece he was encouraged. In India obstacles of every sort were so numerous, so alarming, and apparently so inexplicable, that the difficulties of life could only be solved by constantly appealing to the direct agency of supernatural causes. Those causes being beyond the province of the understanding, the resources of the imagination were incessantly occupied in studying them; the imagination itself was overworked, its activity became dangerous, it encroached on the understanding, and the equilibrium of the whole was destroyed. In Greece opposite circumstances were followed by opposite results. In Greece Nature was less dangerous, less intrusive, and less mysterious than in India. In Greece, therefore, the human mind was less appalled, and less superstitious; natural causes began to be studied; physical science first became possible; and Man, gradually waking to a sense of his own power, sought to investigate events with a boldness not to be expected in those other countries, where the pressure of Nature troubled his independence, and suggested ideas with which knowledge is incompatible.

The effect of these habits of thought on the national religion must be very obvious to whoever has compared the popular creed of India with that of Greece. The mythology of India, like that of every tropical country, is based upon terror, and upon terror, too, of the most extravagant kind. Evidence of the universality of this feeling abounds in the sacred books of the Hindus, in their traditions, and even in the very form and appearance of their gods. And so deeply is all this impressed on the mind, that the most popular deities are invariably those with whom images of fear are most intimately associated. Thus, for example, the worship of Siva is more general than any other; and as to its antiquity, there is reason to believe that it was borrowed by the Brahmins from the original Indians.[263] At all events, it is very ancient, and very popular; and Siva himself forms, with Brahma and Vishnu, the celebrated Hindu Triad. We need not, therefore, be surprised that with this god are connected images of terror, such as nothing but a tropical imagination could conceive. Siva is represented to the Indian mind as a hideous being, encircled by a girdle of snakes, with a human skull in his hand, and wearing a necklace composed of human bones. He has three eyes; the ferocity of his temper is marked by his being clothed in a tiger's skin; he is represented as wandering about

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[261] 'Mount Guino, the highest point in Greece, and near its northern boundary, is 8,239 feet high… No mountain in Greece reaches the limit of perpetual snow.' *M'Culloch's Geog. Dict.* 1849, vol. i. p. 924. Compare the table of mountains in Baker's Memoir on North Greece, in *Journal of Geographical Society*, vol. vii. p. 94, with *Bakewell's Geology*, pp. 621, 622.

[262] 'Greece has no navigable river.' *M'Culloch's Geog. Dict.* vol. i. p. 924. 'Most of the rivers of Greece are torrents in early spring, and dry before the end of the summer.' *Grote's History of Greece*, vol. ii. p. 286.

[263] See Stevenson on *The Anti-Brahmanical Religion of the Hindus*, in *Journal of Asiatic Society*, vol. viii. pp. 331, 332, 336, 338. Mr. Wilson (*Journal*, vol. iii. p. 204) says, 'The prevailing form of the Hindu religion in the south of the peninsula was, at the commencement of the Christian era, and some time before it most probably, that of Siva.' See also vol. v. p. 85, where it is stated that Siva 'is the only Hindu god to whom honour is done at Ellora.' Compare *Transac. of Soc. of Bombay*, vol. iii. p. 521; *Heeren's Asiatic Nations*, 1846, vol. ii. pp. 62, 66. On the philosophical relations between the followers of Siva and those of Vishnu, see *Ritter's Hist. of Ancient Philosophy*, vol. iv. pp. 334, 335; and the noticeable fact (*Buchanan's Mysore*, vol. ii. p. 410), that even the Naimar caste, whose 'proper deity' is Vishnu, 'wear on their foreheads the mark of Siva.' As to the worship of Siva in the time of Alexander the Great, see *Thirlwall's History of Greece*, vol. vii. p. 36; and for further evidence of its extent, *Bohlen*, *das alte Indien*, vol. i. pp. 29, 147, 206, and *Transac. of Asiatic Society*, vol. ii. pp. 50, 294.

like a madman, and over his left shoulder the deadly cobra di capella rears its head. This monstrous creation of an awe-struck fancy has a wife Doorga, called sometimes Kali, and sometimes by other names.[264] She has a body of dark blue; while the palms of her hands are red, to indicate her insatiate appetite for blood. She has four arms, with one of which she carries the skull of a giant; her tongue protrudes, and hangs lollingly from her mouth; round her waist are the hands of her victims; and her neck is adorned with human heads strung together in a ghastly row.[265]

If we now turn to Greece, we find, even in the infancy of its religion, not the faintest trace of any thing approaching to this. For, in Greece, the causes of fear being less abundant, the expression of terror was less common. The Greeks, therefore, were by no means disposed to incorporate into their religion those feelings of dread natural to the Hindus. The tendency of Asiatic civilization was to widen the distance between men and their deities; the tendency of Greek civilization was to diminish it. Thus it is, that in Hindostan all the gods had something monstrous about them; as Vishnu with four hands, Brahma with five heads, and the like.[266] But the gods of Greece were always represented in forms entirely human.[267] In that country, no artist would have gained attention, if he had presumed to portray them in any other shape. He might make them stronger than men, he might make them more beautiful; but still they must be men. The analogy between God and Man, which excited the religious feelings of the Greeks, would have been fatal to those of the Hindus.

This difference between the artistic expressions of the two religions was accompanied by an exactly similar difference between their theological traditions. In the Indian books, the imagination is exhausted in relating the feats of the gods; and the more obviously impossible any achievement is, the greater the pleasure with which it was ascribed to them. But the Greek gods had not only human forms, but also human attributes, human pursuits, and human tastes.[268] The men of Asia, to whom every object of nature was a source of awe, acquired such habits of reverence, that they never dared to assimilate their own actions with the actions of their deities. The men of Europe, encouraged by the safety and inertness of the material world, did not fear to strike a parallel, from which they would have shrunk had they lived amid the dangers of a tropical country. It is thus that the Greek divinities are so different from those of the Hindus, that in comparing them we seem to pass from one creation into another. The Greeks generalized their observations upon the human mind, and then applied them to

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[264] So it is generally stated by the Hindu theologians; but, according to Rammohun Roy, Siva had two wives. See *Rammohun Roy on the Veds*, p. 90.

[265] On these attributes and representations of Siva and Doorga, see *Rhode*, *Religiöse Bildung der Hindus*, vol. ii. p. 241; *Coleman's Mythology of the Hindus*, pp. 63, 92; *Bohlen*, *das alte Indien*, vol. i. p. 207; *Ward's Religion of the Hindoos*, vol. i. pp. xxxvii. 27, 145; *Transac. of Society of Bombay*, vol. i. pp. 215, 221. Compare the curious account of an image supposed to represent Mahadeo, in *Journal Asiatique*, I. série, vol. i. p. 354, Paris, 1822.

[266] *Ward on the Religion of the Hindoos*, vol. i. p. 35; *Transac. of Society of Bombay*, vol. i. p. 223. Compare the gloss in the *Dabistan*, vol. ii. p. 202.

[267] 'The Greek gods were formed like men, with greatly increased powers and faculties, and acted as men would do if so circumstanced, but with a dignity and energy suited to their nearer approach to perfection. The Hindu gods, on the other hand, though endued with human passions, have always something monstrous in their appearance, and wild and capricious in their conduct. They are of various colours, red, yellow, and blue; some have twelve heads, and most have four hands. They are often enraged without a cause, and reconciled without a motive.' *Elphinstone's History of India*, pp. 96, 97. See also *Erskine on the Temple of Elephanta*, in *Transac. of Society of Bombay*, vol. i. p. 246; and the *Dabistan*, vol. i. p. cxi.

[268] 'In the material polytheism of other leading ancient nations, the Egyptians, for example, the incarnation of the Deity was chiefly, or exclusively, confined to animals, monsters, or other fanciful emblems… In Greece, on the other hand, it was an almost necessary result of the spirit and grace with which the deities were embodied in human forms, that they should also be burdened with human interests and passions. Heaven, like earth, had its courts and palaces, its trades and professions, its marriages, intrigues, divorces.' *Mure's History of the Literature of Ancient Greece*, vol. i. pp. 471, 472. So, too, Tennemann (*Geschichte der Philosophie*, vol. iii. p. 419): 'Diese Götter haben Menschengestalt… Haben die Götter aber nicht nur menschliche Gestalt, sondern auch einen menschlichen Körper, so sind sie als Menschen auch denselben Unvollkommenheiten, Krankheiten und dem Tode unterworfen; dieses streitet mit dem Begriffe,' *i. e.* of Epicurus. Compare *Grote's History of Greece*, vol. i. p. 596: 'The mythical age was peopled with a mingled aggregate of gods, heroes, and men, so confounded together, that it was often impossible to distinguish to which class any individual name belonged.' See also the complaint of Xenophanes, in *Müller's Hist. of Lit. of Greece*, London, 1856, p. 251.

the gods.[269] The coldness of women was figured in Diana; their beauty and sensuality in Venus; their pride in Juno; their accomplishments in Minerva. To the ordinary avocations of the gods the same principle was applied. Neptune was a sailor; Vulcan was a smith; Apollo was sometimes a fiddler, sometimes a poet, sometimes a keeper of oxen. As to Cupid, he was a wanton boy, who played with his bow and arrows; Jupiter was an amorous and good-natured king; while Mercury was indifferently represented either as a trustworthy messenger, or else as a common and notorious thief.

Precisely the same tendency to approximate human forces towards superhuman ones, is displayed in another peculiarity of the Greek religion. I mean, that in Greece we for the first time meet with hero-worship, that is, the deification of mortals. According to the principles already laid down, this could not be expected in a tropical civilization, where the Aspects of Nature filled Man with a constant sense of his own incapacity. It is, therefore, natural that it should form no part of the ancient Indian religion;[270] neither was it known to the Egyptians,[271] nor to the Persians,[272] nor, so far as I am aware, to the Arabians.[273] But in Greece, Man being less humbled, and, as it were, less eclipsed, by the external world, thought more of his own powers, and human nature did not fall into that discredit in which it elsewhere sank. The consequence was, that the deification of mortals was a recognized part of the national religion at a very early period in the history of Greece;[274] and this has been found so natural to Europeans, that the same custom was afterwards renewed with eminent success by the Romish Church. Other circumstances, of a very different character, are gradually eradicating this form of idolatry; but its existence is worth observing, as one of the innumerable illustrations of the way in which European civilization has diverged from all those that preceded it.[275]

It is thus, that in Greece every thing tended to exalt the dignity of man, while in India every thing tended to depress it.[276] To sum up the whole, it may be said that the Greeks had more respect for human powers; the Hindus for superhuman. The first dealt more with the known and available; the other with the unknown and mysterious.[277] And by a parity of reasoning, the imagination, which the Hindus, being oppressed by the pomp and majesty of nature, never sought to control, lost its supremacy in the little peninsula of ancient Greece. In Greece, for the first time in the history of the world, the imagination was, in some degree, tempered and confined by the understanding. Not

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[269] The same remark applies to beauty of form, which they first aimed at in the statues of men, and then brought to bear upon the statues of the gods. This is well put in Mr. Grote's important work, *History of Greece*, vol. iv. pp. 133, 134, edit. 1847.

[270] 'But the worship of deified heroes is no part of that system.' *Colebrooke on the Vedas*, in *Asiatic Researches*, vol. viii. p. 495.

[271] *Mackay's Religious Development*, vol. ii. p. 53, Lond. 1850. Compare *Wilkinson's Ancient Egyptians*, vol. iv. pp. 148, 318; and *Matter*, *Histoire de l'Ecole d'Alexandrie*, vol. i. p. 2; the 'culte des grands hommes,' which afterwards arose in Alexandria (*Matter*, vol. i. p. 54), must have been owing to Greek influence.

[272] There are no indications of it in the Zendavesta; and Herodotus says, that the Persians were unlike the Greeks, in so far as they disbelieved in a god having a human form; book i. chap. cxxxi. vol. i. p. 308: οὐκ ἀνθρωποφυέας ἐνόμισαν τοὺς θεοὺς, κατάπερ Ἕλληνες εἶναι.

[273] I am not acquainted with any evidence connecting this worship with the old Arabian religion; and it was certainly most alien to the spirit of Mohammedanism.

[274] *Mure's History of the Literature of Greece*, vol. i. pp. 28, 500, vol. ii. p. 402: very good remarks on a subject handled unsatisfactorily by Coleridge; *Literary Remains*, vol. i. p. 185. Thirlwall (*History of Greece*, vol. i. p. 207) admits that 'the views and feelings out of which it (the worship of heroes) arose, seem to be clearly discernible in the Homeric poems.' Compare *Cudworth's Intellectual System*, vol. ii. pp. 226, 372. In the Cratylus, chap. xxxiii., Socrates is represented as asking, Οὐκ οἶσθα ὅτι ἡμίθεοι ἦρωες; *Platonis Opera*, vol. iv. p. 227, edit. Bekker, Lond. 1826. And in the next century, Alexander obtained for his friend, Hephæstion, the right of being 'worshipped as a hero' *Grote's History of Greece*, vol. xii. p. 339.

[275] The adoration of the dead, and particularly the adoration of martyrs, was one great point of opposition between the orthodox church and the Manichæans (*Beausobre*, *Histoire Critique de Manichée*, vol. i. p. 316, vol. ii. pp. 651, 669); and it is easy to understand how abhorrent such a practice must have been to the Persian heretics.

[276] M. Cousin, in his eloquent and ingenious work (*Histoire de la Philosophie*, 3e série, vol. i. pp. 183, 187), has some judicious observations on what he calls 'l'époque de l'infini' of the East, contrasted with that 'du fini,' which began in Europe. But as to the physical causes of this, he only admits the grandeur of nature, overlooking those natural elements of mystery and of danger by which religious sentiments were constantly excited.

[277] A learned orientalist says, that no people have made such efforts as the Hindus 'to solve, exhaust, comprehend, what is insolvable, inexhaustible, incomprehensible.' *Troyer's Preliminary Discourse on the Dabistan*, vol. i. p. cviii.

that its strength was impaired, or its vitality diminished. It was broken-in and tamed; its exuberance was checked, its follies were chastised. But that its energy remained, we have ample proof in those productions of the Greek mind which have survived to our own time. The gain, therefore, was complete; since the inquiring and sceptical faculties of the human understanding were cultivated, without destroying the reverential and poetic instincts of the imagination. Whether or not the balance was accurately adjusted, is another question; but it is certain that the adjustment was more nearly arrived at in Greece than in any previous civilization.[278] There can, I think, be little doubt that, notwithstanding what was effected, too much authority was left to the imaginative faculties, and that the purely reasoning ones did not receive, and never have received, sufficient attention. Still, this does not affect the great fact, that the Greek literature is the first in which this deficiency was somewhat remedied, and in which there was a deliberate and systematic attempt to test all opinions by their consonance with human reason, and thus vindicate the right of Man to judge for himself on matters which are of supreme and incalculable importance.

I have selected India and Greece as the two terms of the preceding comparison, because our information respecting those countries is most extensive, and has been most carefully arranged. But every thing we know of the other tropical civilizations confirms the views I have advocated respecting the effects produced by the Aspects of Nature. In Central America extensive excavations have been made; and what has been brought to light proves that the national religion was, like that of India, a system of complete and unmitigated terror.[279] Neither there nor in Mexico, nor in Peru, nor in Egypt, did the people desire to represent their deities in human forms, or ascribe to them human attributes. Even their temples are huge buildings, often constructed with great skill, but showing an evident wish to impress the mind with fear, and offering a striking contrast to the lighter and smaller structures which the Greeks employed for religious purposes. Thus, even in the style of architecture do we see the same principle at work; the dangers of the tropical civilization being more suggestive of the infinite, while the safety of the European civilization was more suggestive of the finite. To follow out the consequences of this great antagonism, it would be necessary to indicate how the infinite, the imaginative, the synthetic, and the deductive, are all connected; and are opposed, on the other hand, by the finite, the sceptical, the analytic, and the inductive. A complete illustration of this would carry me beyond the plan of this Introduction and would perhaps exceed the resources of my own knowledge; and I must now leave to the candour of the reader what I am conscious is but an imperfect sketch, but what may, nevertheless, suggest to him materials for future thought, and, if I might indulge the hope, may open to historians a new field, by reminding them that every where the hand of Nature is upon us, and that the history of the human mind can only be understood by connecting with it the history and the aspects of the material universe.

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[278] This is noticed by Tennemann, who, however, has not attempted to ascertain the cause: 'Die Einbildungskraft des Griechen war schöpferisch, sie schuf in seinem Innern neue Ideenwelten; aber er wurde doch nie verleitet, die idealische Welt mit der wirklichen zu verwechseln, weil sie immer mit einem richtigen Verstande und gesunder Beurtheilungskraft verbunden war.' *Geschichte der Philosophie*, vol. i. p. 8; and vol. vi. p. 490, he says, 'Bei allen diesen Mängeln und Fehlern sind doch die Griechen die einzige Nation der alten Welt, welche Sinn für Wissenschaft hatte, und zu diesem Behufe forschte. Sie haben doch die Bahn gebrochen, und den Weg zur Wissenschaft geebnet.' To the same effect, *Sprengel*, *Histoire de la Médecine*, vol. i. p. 215. And on this difference between the Eastern and the European mind, see *Matter*, *Histoire du Gnosticisme*, vol. i. pp. 18, 233, 234. So, too, Kant (*Logik*, in *Kant's Werke*, vol. i. p. 350), 'Unter allen Völkern haben also die Griechen erst angefangen zu philosophiren. Denn sie haben zuerst versucht, nicht an dem Leitfaden der Bilder die Vernunfterkenntnisse zu cultiviren, sondern *in abstracto*; statt dass die anderen Völker sich die Begriffe immer nur durch Bilder *in concreto* verständlich zu machen suchten.'

[279] Thus, of one of the idols at Copan, 'The intention of the sculptor seems to have been to excite terror.' *Stephens's Central America*, vol. i. p. 152; at p. 159, 'The form of sculpture most generally used was a death's head.' At Mayapan (vol. iii. p. 133), 'representations of human figures or animals with hideous features and expressions, in producing which the skill of the artist seems to have been expended;' and again, p. 412, 'unnatural and grotesque faces.'

Note 36 to p. 61

As these views have a social and economical importance quite independent of their physiological value, I will endeavour, in this note, to fortify them still further, by showing that the connexion between carbonized food and the respiratory functions may be illustrated by a wider survey of the animal kingdom.

The gland most universal among the different classes of animals is the liver;[280] and its principal business is to relieve the system of its superfluous carbon, which it accomplishes by secreting bile, a highly carbonized fluid.[281] Now, the connexion between this process and the respiratory functions is highly curious. For, if we take a general view of animal life, we shall find that the liver and lungs are nearly always compensatory; that is to say, when one organ is small and inert, the other is large and active. Thus, reptiles have feeble lungs, but a considerable liver;[282] and thus, too, in fishes, which have no lungs, in the ordinary sense of the word, the size of the liver is often enormous.[283] On the other hand, insects have a very large and complicated system of air tubes; but their liver is minute, and its functions are habitually sluggish.[284] If, instead of comparing the different classes of animals, we compare the different stages through which the same animal passes, we shall find further confirmation of this wide and striking principle. For the law holds good even before birth; since in the unborn infant the lungs have scarcely any activity, but there is an immense liver, which is full of energy and pours out bile in profusion.[285] And so invariable is this relation, that in man the liver is the first organ which is formed: it is preponderant during the whole period of fœtal life; but it rapidly diminishes when, after birth, the lungs come into play, and a new scheme of compensation is established in the system.[286]

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[280] The most constant gland in the animal kingdom is the liver.' *Grant's Comp. Anat.* p. 576. See also *Béclard*, *Anat. Gén.* p. 18, and *Burdach*, *Traité de Physiol.* vol. ix. p. 580. Burdach says, 'Il existe dans presque tout le règne animal;' and the latest researches have detected the rudiments of a liver even in the Entozoa and Rotifera. *Rymer Jones's Animal Kingdom*, 1855, p. 183, and *Owen's Invertebrata*, 1855, p. 104.

[281] Until the analysis made by Demarçay in 1837, hardly any thing was known of the composition of bile; but this accomplished chemist ascertained that its essential constituent is choleate of soda, and that the choleic acid contains nearly sixty-three per cent. of carbon. Compare *Thomson's Animal Chemistry*, pp. 59, 60, 412, 602, with *Simon's Chemistry*, vol. ii. pp. 17–21.

[282] 'The size of the liver and the quantity of the bile are not proportionate to the quantity of the food and frequency of eating; but inversely to the size and perfection of the lungs… The liver is proportionately larger in reptiles, which have lungs with large cells incapable of rapidly decarbonizing the blood.' *Good's Study of Medicine*, 1829, vol. i. pp. 32, 33. See *Cuvier*, *Règne Animal*, vol. ii. p. 2, on 'la petitesse des vaisseaux pulmonaires' of reptiles.

[283] *Carus's Comparative Anatomy*, vol. ii. p. 230; *Grant's Comp. Anat.* pp. 385, 596; *Rymer Jones's Animal Kingdom*, p. 646.

[284] Indeed it has been supposed by M. Gaëde that the 'vaisseaux biliares' of some insects were not 'sécréteurs;' but this opinion appears to be erroneous. See Latreille, in *Cuvier*, *Règne Animal*, vol. iv. pp. 297, 298.

[285] 'La prédominance du foie avant la naissance' is noticed by Bichat (*Anatomie Générale*, vol. ii. p. 272), and by many other physiologists; but Dr. Elliotson appears to have been one of the first to understand a fact, the explanation of which we might vainly seek for in the earlier writers. 'The hypothesis, that one great use of the liver was, like that of the lungs, to remove carbon from the system, with this difference, that the alteration of the capacity of the air caused a reception of caloric into the blood, in the case of the lungs, while the hepatic excretion takes place without introduction of caloric, was, I recollect, a great favourite with me when a student… The Heidelberg professors have adduced many arguments to the same effect. In the fœtus, for whose temperature the mother's heat must be sufficient, the lungs perform no function; but the liver is of great size, and bile is secreted abundantly, so that the meconium accumulates considerably during the latter months of pregnancy.' *Elliotson's Human Physiology*, 1840, p. 102. In *Lepelletier's Physiologie Médicale*, vol. i. p. 466, vol. ii. pp. 14, 546, 550, all this is sadly confused.

[286] 'The liver is the first-formed organ in the embryo. It is developed from the alimentary canal, and at about the third week fills the whole abdomen, and is one-half the weight of the entire embryo… At birth it is of very large size, and occupies the whole upper part of the abdomen… The liver diminishes rapidly after birth, probably from obliteration of the umbilical vein.' *Wilson's Human Anatomy*, 1851, p. 638. Compare *Burdach's Physiologie*, vol. iv. p. 447, where it is said of the liver in childhood, 'Cet organe croît avec lenteur, surtout comparativement aux poumons; le rapport de ceux-ci au foie étant à peu près de 1:3 avant la respiration, il était de 1:1.86 après l'établissement de cette dernière fonction.' See also p. 91, and vol. iii. p. 483; and on the predominance of the liver in fœtal life, see the remarks of Serres (*Geoffroy Saint-Hilaire*, *Anomalies de l'Organisation*, vol. ii. p. 11), whose generalization is perhaps a little premature.

These facts, interesting to the philosophic physiologist, are of great moment in reference to the doctrines advocated in this chapter. Inasmuch as the liver and lungs are compensatory in the history of their organization, it is highly probable that they are also compensatory in the functions they perform; and that what is left undone by one will have to be accomplished by the other. The liver, therefore, fulfilling the duty, as chemistry teaches us, of decarbonizing the system by secreting a carbonized fluid, we should expect, even in the absence of any further evidence, that the lungs would be likewise decarbonizing; in other words, we should expect that if, from any cause, we are surcharged with carbon, our lungs must assist in remedying the evil. This brings us, by another road, to the conclusion that highly carbonized food has a tendency to tax the lungs; so that the connexion between a carbonized diet and the respiratory functions, instead of being, as some assert, a crude hypothesis, is an eminently scientific theory, and is corroborated not only by chemistry, but by the general scheme of the animal kingdom, and even by the observation of embryological phenomena. The views of Liebig, and of his followers, are indeed supported by so many analogies, and harmonize so well with other parts of our knowledge, that nothing but a perverse hatred of generalization, or an incapacity for dealing with large speculative truths, can explain the hostility directed against conclusions which have been gradually forcing themselves upon us since Lavoisier, seventy years ago, attempted to explain the respiratory functions by subjecting them to the laws of chemical combination.

In this, and previous notes (see in particular notes 30, 31, 35), I have considered the connexion between food respiration, and animal heat, at a length which will appear tedious to readers uninterested in physiological pursuits; but the investigation has become necessary, on account of the difficulties raised by experimenters, who, not having studied the subject comprehensively, object to certain parts of it. To mention what, from the ability and reputation of the author, is a conspicuous instance of this, Sir Benjamin Brodie has recently published a volume (*Physiological Researches*, 1851) containing some ingeniously contrived experiments on dogs and rabbits, to prove that heat is generated rather by the nervous system than by the respiratory organs. Without following this eminent surgeon into all its details, I may be permitted to observe, 1st, That, as a mere matter of history, no great physiological truth has ever yet been discovered, nor has any great physiological fallacy been destroyed, by such limited experiments on a single class of animals; and this is partly because in physiology a crucial instance is impracticable, owing to the fact that we deal with resisting and living bodies, and partly because every experiment produces an abnormal condition, and thus lets in fresh causes, the operation of which is incalculable; unless, as often happens in the inorganic world, we can control the whole phenomenon. 2nd, That the other department of the organic world, namely, the vegetable kingdom, has, so far as we are aware, no nervous system, but nevertheless possesses heat; and we moreover know that the heat is a product of oxygen and carbon (see note 32 to chapter ii.). 3d, That the evidence of travellers respecting the different sorts of food, and the different quantities of food, used in hot countries and in cold ones, is explicable by the respiratory and chemical theories of the origin of animal heat, but is inexplicable by the theory of the nervous origin of heat.

CHAPTER III
EXAMINATION OF THE METHOD EMPLOYED BY METAPHYSICIANS FOR DISCOVERING MENTAL LAWS

The evidence that I have collected seems to establish two leading facts, which, unless they can be impugned, are the necessary basis of universal history. The first fact is, that in the civilizations out of Europe, the powers of nature have been far greater than in those in Europe. The second fact is, that those powers have worked immense mischief; and that while one division of them has caused an unequal distribution of wealth, another division of them has caused an unequal distribution of thought, by concentrating attention upon subjects which inflame the imagination. So far as the experience of the past can guide us, we may say, that in all the extra European civilizations, these obstacles are insuperable: certainly no nation has ever yet overcome them. But Europe, being constructed upon a smaller plan than the other quarters of the world – being also in a colder region, having a less exuberant soil, a less imposing aspect, and displaying in all her physical phenomena much greater feebleness – it was easier for Man to discard the superstitions which Nature suggested to his imagination; and it was also easier for him to effect, not, indeed, a just division of wealth, but something nearer to it, than was practicable in the older countries.

Hence it is that, looking at the history of the world as a whole, the tendency has been, in Europe, to subordinate nature to man; out of Europe, to subordinate man to nature. To this there are, in barbarous countries, several exceptions; but in civilized countries the rule has been universal. The great division, therefore, between European civilization and non-European civilization, is the basis of the philosophy of history, since it suggests the important consideration, that if we would understand, for instance, the history of India, we must make the external world our first study, because it has influenced man more than man has influenced it. If, on the other hand, we would understand the history of a country like France or England, we must make man our principal study, because nature being comparatively weak, every step in the great progress has increased the dominion of the human mind over the agencies of the external world. Even in those countries where the power of man has reached the highest point, the pressure of nature is still immense; but it diminishes in each succeeding generation, because our increasing knowledge enables us not so much to control nature as to foretell her movements, and thus obviate many of the evils she would otherwise occasion. How successful our efforts have been, is evident from the fact, that the average duration of life constantly becomes longer, and the number of inevitable dangers fewer; and what makes this the more remarkable is, that the curiosity of men is keener, and their contact with each other closer, than in any former period; so that while apparent hazards are multiplied, we find from experience that real hazards are, on the whole, diminished.[287]

If, therefore, we take the largest possible view of the history of Europe, and confine ourselves entirely to the primary cause of its superiority over other parts of the world, we must resolve it into the encroachment of the mind of man upon the organic and inorganic forces of nature. To this all other causes are subordinate.[288] For we have seen that wherever the powers of nature reached a certain

[287] This diminution of casualties is undoubtedly one cause, though a slight one, of the increased duration of life; but the most active cause is a general improvement in the physical condition of man: see *Sir B. Brodie's Lectures on Pathology and Surgery*, p. 212; and for proof that civilized men are stronger than uncivilized ones, see *Quetelet, sur l'Homme*, vol. ii. pp. 67, 272; *Lawrence's Lectures on Man*, pp. 275, 276; *Ellis's Polynesian Researches*, vol. i. p. 98; *Whately's Lectures on Political Economy*, 8vo. 1831, p. 59; *Journal of the Statistical Society*, vol. xvii. pp. 32, 33; *Dufau, Traité de Statistique*, p. 107; *Hawkins's Medical Statistics*, p. 232.

[288] The general social consequences of this I shall hereafter consider; but the mere economical consequences are well expressed

height, the national civilization was irregularly developed, and the advance of the civilization stopped. The first essential was, to limit the interference of these physical phenomena; and that was most likely to be accomplished where the phenomena were feeblest and least imposing. This was the case with Europe; it is accordingly in Europe alone, that man has really succeeded in taming the energies of nature, bending them to his own will, turning them aside from their ordinary course, and compelling them to minister to his happiness, and subserve the general purposes of human life.

All around us are the traces of this glorious and successful struggle. Indeed, it seems as if in Europe there was nothing man feared to attempt. The invasions of the sea repelled, and whole provinces, as in the case of Holland, rescued from its grasp, mountains cut through and turned into level roads; soils of the most obstinate sterility becoming exuberant, from the mere advance of chemical knowledge; while, in regard to electric phenomena, we see the subtlest, the most rapid, and the most mysterious of all forces, made the medium of thought, and obeying even the most capricious behests of the human mind.

In other instances, where the products of the external world have been refractory, man has succeeded in destroying what he could hardly hope to subjugate. The most cruel diseases, such as the plague, properly so called, and the leprosy of the Middle Ages,[289] have entirely disappeared from the civilized parts of Europe; and it is scarcely possible that they should ever again be seen there. Wild beasts and birds of prey have been extirpated, and are no longer allowed to infest the haunts of civilised men. Those frightful famines, by which Europe used to be ravaged several times in every century,[290] have ceased; and so successfully have we grappled with them, that there is not the slightest fear of their ever returning with any thing like their former severity. Indeed, our resources are now so great, that we could at worst, only suffer from a slight and temporary scarcity: since, in the present state of knowledge, the evil would be met at the outset by remedies which chemical science could easily suggest.[291]

It is hardly necessary to notice how, in numerous other instances, the progress of European civilization has been marked by the diminished influence of the external world: I mean, of course, those peculiarities of the external world which have an existence independent of the wishes of man, and were not created by him. The most advanced nations do, in their present state, owe comparatively little to those original features of nature which, in every civilization out of Europe, exercised unlimited power. Thus, in Asia and elsewhere, the course of trade, the extent of commerce, and many similar circumstances, were determined by the existence of rivers, by the facility with which they could be navigated, and by the number and goodness of the adjoining harbours. But, in Europe, the determining cause is, not so much these physical peculiarities, as the skill and energy of man. Formerly the richest countries were those in which nature was most bountiful; now the richest countries are those in which man is most active. For, in our age of the world, if nature is parsimonious, we know how to

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by Mr. Mill: 'Of the features which characterize this progressive economical movement of civilized nations, that which first excites attention, through its intimate connexion with the phenomena of Production, is the perpetual, and, so far as human foresight can extend, the unlimited, growth of man's power over nature. Our knowledge of the properties and laws of physical objects shows no sign of approaching its ultimate boundaries; it is advancing more rapidly, and in a greater number of directions at once, than in any previous age or generation, and affording such frequent glimpses of unexplored fields beyond, as to justify the belief that our acquaintance with nature is still almost in its infancy.' *Mill's Principles of Polit. Economy*, vol. ii. pp. 246–7.

[289] What this horrible disease once was, may be estimated from the fact, 'qu'au treizième siècle on comptait en France seulement, deux mille léproseries, et que l'Europe entière renfermait environ dix-neuf mille établissemens semblables.' *Sprengel*, *Histoire de la Médecine*, vol. ii. p. 374. As to the mortality caused by the plague, see *Clot-Bey*, *de la Peste*, Paris, 1840, pp. 62, 63, 185, 292.

[290] For a curious list of famines, see an essay by Mr. Farr, in *Journal of the Statistical Society*, vol. ix. pp. 159–163. He says, that in the eleventh, twelfth, and thirteenth centuries, the average was, in England, one famine every fourteen years.

[291] In the opinion of one of the highest living authorities, famine is, even in the present state of chemistry, 'next to impossible.' *Herschel's Discourse on Natural Philosophy*, p. 65. Cuvier (*Recueil des Eloges*, vol. i. p. 10) says that we have succeeded 'a rendre toute famine impossible.' See also *Godwin on Population*, p. 500; and for a purely economical argument to prove the impossibility of famine, see *Mill's Principles of Political Economy*, vol. ii. p. 258; and compare a note in *Ricardo's Works*, p. 191. The Irish famine may seem an exception: but it could have been easily baffled except for the poverty of the people, which frustrated our efforts to reduce it to a dearth.

compensate her deficiencies. If a river is difficult to navigate, or a country difficult to traverse, our engineers can correct the error, and remedy the evil. If we have no rivers, we make canals; if we have no natural harbours, we make artificial ones. And so marked is this tendency to impair the authority of natural phenomena, that it is seen even in the distribution of the people, since, in the most civilized parts of Europe, the population of the towns is everywhere outstripping that of the country; and it is evident that the more men congregate in great cities, the more they will become accustomed to draw their materials of thought from the business of human life, and the less attention they will pay to those peculiarities of nature, which are the fertile source of superstition, and by which, in every civilization out of Europe, the progress of man was arrested.

From these facts it may be fairly inferred, that the advance of European civilization is characterized by a diminishing influence of physical laws, and an increasing influence of mental laws. The complete proof of this generalization can be collected only from history; and therefore I must reserve a large share of the evidence on which it is founded for the future volumes of this work. But that the proposition is fundamentally true must be admitted by whoever, in addition to the arguments just adduced, will concede two premiss is, neither of which seem susceptible of much dispute. The first premiss is, that we are in possession of no evidence that the powers of nature have ever been permanently increased; and that we have no reason to expect that any such increase can take place. The other premiss is, that we have abundant evidence that the resources of the human mind have become more powerful, more numerous, and more able to grapple with the difficulties of the external world; because every fresh accession to our knowledge supplies fresh means with which we can either control the operations of nature, or, failing in that, can foresee the consequences, and thus avoid what it is impossible to prevent; in both instances, diminishing the pressure exercised on us by external agents.

If these premisses are admitted, we are led to a conclusion which is of great value for the purpose of this Introduction. For, if the measure of civilization is the triumph of the mind over external agents, it becomes clear, that of the two classes of laws which regulate the progress of mankind, the mental class is more important than the physical. This, indeed, is assumed by one school of thinkers as a matter of course, though I am not aware that its demonstration has been hitherto attempted by any thing even approaching an exhaustive analysis. The question, however, as to the originality of my arguments, is one of very trifling moment; but what we have to notice is, that in the present stage of our inquiry, the problem with which we started has become simplified, and a discovery of the laws of European history is resolved, in the first instance, into a discovery of the laws of the human mind. These mental laws, when ascertained, will be the ultimate basis of the history of Europe; the physical laws will be treated as of minor importance, and as merely giving rise to disturbances, the force and the frequency of which have, during several centuries, perceptibly diminished.

If we now inquire into the means of discovering the laws of the human mind, the metaphysicians are ready with an answer; and they refer us to their own labours as supplying a satisfactory solution. It therefore becomes necessary to ascertain the value of their researches, to measure the extent of their resources, and, above all, to test the validity of that method which they always follow, and by which alone, as they assert, great truths can be elicited.

The metaphysical method, though necessarily branching into two divisions, is, in its origin, always the same, and consists in each observer studying the operations of his own mind.[292] This is the direct opposite of the historical method; the metaphysician studying one mind, the historian studying many minds. Now, the first remark to make on this is, that the metaphysical method is one by which

[292] 'As the metaphysician carries within himself the materials of his reasoning, he is not under a necessity of looking abroad for subjects of speculation or amusement.' *Stewart's Philosophy of the Mind*, vol. i. p. 462; and the same remark, almost literally repeated, at vol. iii. p. 260. Locke makes what passes in each man's mind the sole source of metaphysics, and the sole test of their truth. *Essay concerning Human Understanding*, in *Locke's Works*, vol. i. pp. 18, 76, 79, 121, 146, 152, 287, vol. ii. pp. 141, 243.

no discovery has ever yet been made in any branch of knowledge. Every thing we at present know has been ascertained by studying phenomena, from which all casual disturbances having been removed, the law remains as a conspicuous residue.[293] And this can only be done by observations so numerous as to eliminate the disturbances, or else by experiments so delicate as to isolate the phenomena. One of these conditions is essential to all inductive science; but neither of them does the metaphysician obey. To isolate the phenomenon is for him an impossibility; since no man, into whatever state of reverie he may be thrown, can entirely cut himself off from the influence of external events, which must produce an effect on his mind, even when he is unconscious of their presence. As to the other condition, it is by the metaphysician set at open defiance; for his whole system is based on the supposition that, by studying a single mind, he can get the laws of all minds; so that while he, on the one hand, is unable to isolate his observations from disturbances, he, on the other hand, refuses to adopt the only remaining precaution – he refuses so to enlarge his survey as to eliminate the disturbances by which his observations are troubled.[294]

This is the first and fundamental objection to which metaphysicians are exposed, even on the threshold of their science. But if we penetrate a little deeper, we shall meet with another circumstance, which, though less obvious, is equally decisive. After the metaphysician has taken for granted that, by studying one mind, he can discover the laws of all minds, he finds himself involved in a singular difficulty as soon as he begins to apply even this imperfect method. The difficulty to which I allude is one which, not being met with in any other pursuit, seems to have escaped the attention of those who are unacquainted with metaphysical controversies. To understand, therefore, its nature, it is requisite to give a short account of those two great schools, to one of which all metaphysicians must necessarily belong.

In investigating the nature of the human mind, according to the metaphysical scheme, there are two methods of proceeding, both of which are equally obvious, and yet both of which lead to entirely different results. According to the first method, the inquirer begins by examining his sensations. According to the other method, he begins by examining his ideas. These two methods always have led, and always must lead, to conclusions diametrically opposed to each other. Nor are the reasons of this difficult to understand. In metaphysics, the mind is the instrument as well as the material on which the instrument is employed. The means by which the science must be worked out, being thus the same as the object upon which it works, there arises a difficulty of a very peculiar kind. This difficulty is, the impossibility of taking a comprehensive view of the whole of the mental phenomena; because, however extensive such a view may be, it must exclude the state of the mind by which, or in which, the view itself is taken. Hence we may perceive what, I think, is a fundamental difference between physical and metaphysical inquiries. In physics, there are several methods of proceeding, all of which lead to the same results. But in metaphysics, it will invariably be found, that if two men of equal ability, and equal honesty, employ different methods in the study of the mind, the conclusions which they obtain will also be different. To those who are unversed in these matters, a few illustrations will set this in a clearer light. Metaphysicians who begin by the study of ideas observe in their own minds an idea of space. Whence, they ask, can this arise? It cannot, they say, owe its origin to the senses, because the senses only supply what is finite and contingent; whereas

[293] The deductive sciences form, of course, an exception to this; but the whole theory of metaphysics is founded on its inductive character, and on the supposition that it consists of generalized observations, and that from them alone the science of mind can be raised.

[294] These remarks are only applicable to those who follow the purely metaphysical method of investigation. There is, however, a very small number of metaphysicians, among whom M. Cousin is the most eminent in France, in whose works we find larger views, and an attempt to connect historical inquiries with metaphysical ones; thus recognizing the necessity of verifying their original speculations. To this method there can be no objection, provided the metaphysical conclusions are merely regarded as hypothesis, which require verification to raise them to theories. But, instead of this cautious proceeding, the almost invariable plan is, to treat the hypothesis as if it were a theory already proved, and as if there remained nothing to do but to give historical illustrations of truths established by the psychologist. This confusion between illustration and verification appears to be the universal failing of those who, like Vico and Fichte, speculate upon historical phenomena *à priori*.

the idea of space is infinite and necessary.[295] It is infinite, since we cannot conceive that space has an end; and it is necessary, since we cannot conceive the possibility of its non-existence. Thus far the idealist. But the sensualist, as he is called,[296]– he who begins, not with ideas, but with sensations, arrives at a very different conclusion. He remarks that we can have no idea of space until we have first had an idea of objects; and that the ideas of objects can only be the results of the sensations which those objects excite. As to the idea of space being necessary, this, he says, only results from the circumstance that we never can perceive an object which does not bear a certain position to some other object. This forms an indissoluble association between the idea of position and the idea of an object; and as this association is constantly repeated before us, we at length find ourselves unable to conceive an object without position, or, in other words, without space.[297] As to space being infinite, this, he says, is a notion we get by conceiving a continual addition to lines, or to surfaces, or to bulk, which are the three modifications of extension.[298] On innumerable other points we find the same discrepancy between the two schools. The idealist,[299] for example, asserts that our notions of cause, of time, of personal identity, and of substance, are universal and necessary; that they are simple; and that not being susceptible of analysis, they must be referred to the original constitution of the mind.[300] On the other hand, the sensationalist, so far from recognizing the simplicity of these ideas, considers them to be extremely complex, and looks upon their universality and necessity as merely the result of a frequent and intimate association.[301]

This is the first important difference which is inevitably consequent on the adoption of different methods. The idealist is compelled to assert, that necessary truths and contingent truths have a

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[295] Compare *Stewart's Philosophy of the Mind*, vol. ii. p. 194, with *Cousin*, *Hist. de la Philosophie*, II. série, vol. ii. p. 92. Among the Indian metaphysicians, there was a sect which declared space to be the cause of all things. *Journal of Asiatic Soc.* vol. vi. pp. 268, 290. See also the *Dabistan*, vol. ii. p. 40, which, however, was contrary to the Vedas. *Rammohun Roy on the Veds*, 1832, pp. 8, 111. In Spain, the doctrine of the infinity of space is heretical. *Doblado's Letters*, p. 96; which should be compared with the objection of Irenæus against the Valentinians, in *Beausobre*, *Histoire de Manichée*, vol. ii. p. 275. For the different theories of space, I may, moreover, refer to *Ritter's Hist. of Ancient Philosophy*, vol. i. pp. 451, 473, 477, vol. ii. p. 314, vol. iii. pp. 195–204; *Cudworth's Intellectual System*, vol. i. p. 191, vol. iii. pp. 230, 472; *Kritik der reinen Vernunft*, in *Kant's Werke*, vol. ii. pp. 23, 62, 81, 120, 139, 147, 256, 334, 347; *Tennemann*, *Geschichte der Philosophie*, vol. i. p. 109, vol. ii. p. 303, vol. iii. pp. 130–137, vol. iv. p. 284, vol. v. pp. 384–387, vol. vi. p. 99, vol. viii. pp. 87, 88, 683, vol. ix. pp. 257, 355, 410, vol. x. p. 79, vol. xi. pp. 195, 385–389.

[296] This is the title conferred by M. Cousin upon nearly all the greatest English metaphysicians, and upon Condillac and all his disciples in France, their system having 'le nom mérité de sensualisme.' *Cousin*, *Histoire de la Philosophie*, II. série, vol. ii. p. 88. The same name is given to the same school, in *Feuchtersleben's Medical Psychology*, p. 52, and in *Renouard's Histoire de la Médecine*, vol. i. p. 346, vol. ii. p. 368. In *Jobert's New System of Philosophy*, vol. ii. p. 334, 8vo. 1849, it is called 'sensationalism,' which seems a preferable expression.

[297] This is very ably argued by Mr. James Mill in his *Analysis of the Phenomena of the Human Mind*, vol. ii. pp. 32, 93–95, and elsewhere. Compare *Essay concerning Human Understanding*, in *Locke's Works*, vol. i. pp. 147, 148, 154, 157, and the ingenious distinction, p. 198, 'between the idea of the infinity of space, and the idea of a space infinite.' At p. 208, Locke sarcastically says, 'But yet, after all this, there being men who persuade themselves that they have clear, positive, comprehensive ideas of infinity, it is fit they enjoy their privilege; and I should be very glad (with some others that I know, who acknowledge they have none such) to be better informed by their communication.'

[298] *Mill's Analysis of the Mind*, vol. ii. pp. 96, 97. See also the *Examination of Malebranche*, in *Locke's Works*, vol. viii. pp. 248, 249; and *Müller's Elements of Physiology*, vol. ii. p. 1081, which should be compared with *Comte*, *Philosophie Positive*, vol. i. p. 354.

[299] I speak of idealists in opposition to sensationalists; though the word idealist is often used by metaphysicians in a very different sense. On the different kinds of idealism, see *Kritik der reinen Vernunft*, and *Prolegomena zu jeder künftigen Metaphysik*, in *Kant's Werke*, vol. ii. pp. 223, 389, vol. iii. pp. 204, 210, 306, 307. According to him, the Cartesian idealism is empirical.

[300] Thus, Dugald Stewart (*Philosophical Essays*, Edin. 1810, p. 33) tells us of 'the simple idea of personal identity.' And Reid (*Essays on the Powers of the Mind*, vol. i. p. 354) says, 'I know of no ideas or notions that have a better claim to be accounted simple and original than those of space and time.' In the Sanscrit metaphysics, time is 'an independent cause.' See the *Vishnu Purana*, pp. 10, 216.

[301] 'As Space is a comprehensive word, including all positions, or the whole of synchronous order, so Time is a comprehensive word, including all successions, or the whole of successive order.' *Mill's Analysis of the Mind*, vol. ii. p. 100; and on the relation of time to memory, vol. i. p. 252. In *Jobert's New System of Philosophy*, vol. i. p. 33, it is said that 'time is nothing but the succession of events, and we know events by experience only.' See also p. 133, and compare respecting time *Condillac*, *Traité des Sensations*, pp. 104–114, 222, 223, 331–333. To the same effect is *Essay concerning Human Understanding*, book ii. chap. xiv., in *Locke's Works*, vol. i. p. 163; and see his second reply to the Bishop of Worcester, in *Works*, vol. iii. pp. 414–416; and as to the idea of substance, see vol. i. pp. 285–290, 292, 308, vol. iii. pp. 5, 10, 17.

different origin.[302] The sensationalist is bound to affirm that they have the same origin.[303] The further these two great schools advance, the more marked does their divergence become. They are at open war in every department of morals, of philosophy, and of art. The idealists say that all men have essentially the same notion of the good, the true, and the beautiful. The sensationalists affirm that there is no such standard, because ideas depend upon sensations, and because the sensations of men depend upon the changes in their bodies, and upon the external events by which their bodies are affected.

Such is a short specimen of the opposite conclusions to which the ablest metaphysicians have been driven, by the simple circumstance that they have pursued opposite methods of investigation. And this is the more important to observe, because, after these two methods have been employed, the resources of metaphysics are evidently exhausted.[304] Both parties agree that mental laws can only be discovered by studying individual minds, and that there is nothing in the mind which is not the result either of reflection or of sensation. The only choice, therefore, they have to make, is between subordinating the results of sensation to the laws of reflection, or else subordinating the results of reflection to the laws of sensation. Every system of metaphysics has been constructed according to one of these schemes; and this must always continue to be the case, because, when the two schemes are added together, they include the totality of metaphysical phenomena. Each process is equally plausible;[305] the supporters of each are equally confident; and, by the very nature of the dispute, it is impossible that any middle term should be found; nor can there ever be an umpire, because no one can mediate between metaphysical controversies without being a metaphysician, and no one can be a metaphysician without being either a sensationalist or an idealist; in other words, without belonging to one of those very parties whose claims he professes to judge.[306]

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[302] Reid (*Essays on the Powers of the Mind*, vol. i. p. 281) says, that necessary truths 'cannot be the conclusions of the senses; for our senses testify only what is, and not what must necessarily be.' See also vol. ii. pp. 53, 204, 239, 240, 281. The same distinction is peremptorily asserted in *Whewell's Philosophy of the Inductive Sciences*, 8vo, 1847, vol. i. pp. 60–73, 140; and see *Dugald Stewart's Philosophical Essays*, pp. 123, 124. Sir W. Hamilton (*Additions to Reid's Works*, p. 754) says, that non-contingent truths 'have their converse absolutely incogitable.' But this learned writer does not mention how we are to know when anything is 'absolutely incogitable.' That we cannot cogitate an idea, is certainly no proof of its being incogitable; for it may be cogitated at some later period, when knowledge is more advanced.

[303] This is asserted by all the followers of Locke; and one of the latest productions of that school declares, that 'to say that necessary truths cannot be acquired by experience, is to deny the most clear evidence of our senses and reason.' *Jobert's New System of Philosophy*, vol. i. p. 58.

[304] To avoid misapprehension, I may repeat, that, here and elsewhere, I mean by metaphysics, that vast body of literature which is constructed on the supposition that the laws of the human mind can be generalized *solely* from the facts of individual consciousness. For this scheme, the word 'metaphysics' is rather inconvenient, but it will cause no confusion if this definition of it is kept in view by the reader.

[305] What a celebrated historian of philosophy says of Platonism, is equally true of all the great metaphysical systems: 'Dass sie ein zusammenhängendes harmonisches Ganzes ausmachen (*i. e.* the leading propositions of it) fällt in die Augen.' *Tennemann*, *Geschichte der Philosophie*, vol. ii. p. 527. And yet he confesses (vol. iii. p. 52) of it and the opposite system: 'und wenn man auf die Beweise siehet, so ist der Empirismus des Aristoteles nicht besser begründet als der Rationalismus des Plato.' Kant admits that there can be only one true system, but is confident that he has discovered what all his predecessors have missed. *Die Metaphysik der Sitten*, in *Kant's Werke*, vol. v. p. 5, where he raises the question, 'ob es wohl mehr, als eine Philosophie geben könne.' In the *Kritik*, and in the *Prolegomena zujeder künftigen Metaphysik*, he says that metaphysics have made no progress, and that the study can hardly be said to exist. *Werke*, vol. ii. pp. 49, 50, vol. iii. pp. 166, 246.

[306] We find a curious instance of this, in the attempt made by M. Cousin to found an eclectic school; for this very able and learned man has been quite unable to avoid the one-sided view which is to every metaphysician an essential preliminary; and he adopts that fundamental distinction between necessary ideas and contingent ideas, by which the idealist is separated from the sensationalist: 'la grande division des idées aujourd'hui établie est la division des idées contingentes et des idées nécessaires.' *Cousin*, *Hist. de la Philosophie*, II. série, vol. i. p. 82: see also vol. ii. p. 92, and the same work, I. série, vol. i. pp. 249, 267, 268, 311, vol. iii. pp. 51–54. M. Cousin constantly contradicts Locke, and then says he has refuted that profound and vigorous thinker; while he does not even state the arguments of James Mill, who, as a metaphysician, is the greatest of our modern sensationalists, and whose views, whether right or wrong, certainly deserve notice from an eclectic historian of philosophy.Another eclectic, Sir W. Hamilton, announces (*Discussions on Philosophy*, p. 597) 'an undeveloped philosophy, which, I am confident, is founded upon truth. To this confidence I have come, not merely through the convictions of my own consciousness, but by finding in this system a centre and conciliation for the most opposite of philosophical opinions.' But, at p. 589, he summarily disposes of one of the most important of these philosophical opinions as 'the superficial edifice of Locke.'

On these grounds, we must, I think, arrive at the conclusion, that as metaphysicians are unavoidably, and by the very nature of their inquiry, broken up into two completely antagonistic schools, the relative truth of which there are no means of ascertaining; as they, moreover, have but few resources, and as they use those resources according to a method by which no other science has ever been developed, – we, looking at these things, ought not to expect that they can supply us with sufficient data for solving those great problems which the history of the human mind presents to our view. And whoever will take the pains fairly to estimate the present condition of mental philosophy, must admit that, notwithstanding the influence it has always exercised over some of the most powerful minds, and through them over society at large, there is, nevertheless, no other study which has been so zealously prosecuted, so long continued, and yet remains so barren of results. In no other department has there been so much movement, and so little progress. Men of eminent abilities, and of the greatest integrity of purpose, have in every civilized country, for many centuries, been engaged in metaphysical inquiries; and yet at the present moment their systems, so far from approximating towards truth, are diverging from each other with a velocity which seems to be accelerated by the progress of knowledge. The incessant rivalry of the hostile schools, the violence with which they have been supported, and the exclusive and unphilosophic confidence with which each has advocated its own method, – all these things have thrown the study of the mind into a confusion only to be compared to that in which the study of religion has been thrown by the controversies of the theologians.[307] The consequence is, that if we except a very few of the laws of association, and perhaps I may add the modern theories of vision and of touch,[308] there is not to be found in the whole compass of metaphysics a single principle of importance, and at the same time of incontestable truth. Under these circumstances, it is impossible to avoid a suspicion that there is some fundamental error in the manner in which these inquiries have been prosecuted. For my own part, I believe that, by mere observation of our own minds, and even by such rude experiments as we are able to make upon them, it will be impossible to raise psychology to a science; and I entertain very little doubt that metaphysics can only be successfully studied by an investigation of history so comprehensive as to enable us to understand the conditions which govern the movements of the human race.[309]

[307] Berkeley, in a moment of candour, inadvertently confesses what is very damaging to the reputation of his own pursuits: 'Upon the whole, I am inclined to think that the far greater part, if not all, of those difficulties which have hitherto amused philosophers, and blocked up the way to knowledge, are entirely owing to ourselves. That we have first raised a dust, and then complain we cannot see.' *Principles of Human Knowledge*, in *Berkeley's Works*, vol. i. p. 74. Every metaphysician and theologian should get this sentence by heart: 'That we have first raised a dust, and then complain we cannot see.'

[308] Some of the laws of association, as stated by Hume and Hartley, are capable of historical verification, which would change the metaphysical hypothesis into a scientific theory. Berkeley's theory of vision, and Brown's theory of touch, have, in the same way, been verified physiologically; so that we now know what otherwise we could only have suspected.

[309] In regard to one of the difficulties stated in this chapter as impeding metaphysicians, it is only just to quote the remarks of Kant: 'Wie aber das Ich, der ich denke, von dem Ich, das sich selbst anschaut, unterschieden (indem ich mir noch andere Anschauungsart wenigstens als möglich vorstellen kann), und doch mit diesem letzteren als dasselbe Subject einerlei sei, wie ich also sagen könne: Ich als Intelligenz und denkend Subject, erkenne mich selbst als gedachtes Object, so fern ich mir noch über das in der Anschauung gegeben bin, nur, gleich anderen Phänomenen, nicht wie ich vor dem Verstande bin, sondern wie ich mir erscheine, hat nicht mehr auch nicht weniger Schwierigkeit bei sich, als wie ich mir selbst überhaupt ein Object und zwar der Anschauung und innerer Wahrnehmungen sein könne.' *Kritik der reinen Vernunft*, in *Kant's Werke*, vol. ii. p. 144. I am very willing to let the question rest on this: for to me it appears that both cases are not only equally difficult, but, in the present state of our knowledge, are equally impossible.

CHAPTER IV
MENTAL LAWS ARE EITHER MORAL OR INTELLECTUAL. COMPARISON OF MORAL AND INTELLECTUAL LAWS, AND INQUIRY INTO THE EFFECT PRODUCED BY EACH ON THE PROGRESS OF SOCIETY

In the preceding chapter, it has, I trust, been made apparent, that, whatever may hereafter be the case, we, looking merely at the present state of our knowledge, must pronounce the metaphysical method to be unequal to the task, often imposed upon it, of discovering the laws which regulate the movements of the human mind. We are, therefore, driven to the only remaining method, according to which mental phenomena are to be studied, not simply as they appear in the mind of the individual observer, but as they appear in the actions of mankind at large. The essential opposition between these two plans is very obvious: but it may perhaps be well to bring forward further illustration of the resources possessed by each for the investigation of truth; and for this purpose, I will select a subject which, though still imperfectly understood, supplies a beautiful instance of the regularity with which, under the most conflicting circumstances, the great Laws of Nature are able to hold their course.

The case to which I refer, is that of the proportion kept up in the births of the sexes; a proportion which if it were to be greatly disturbed in any country, even for a single generation, would throw society into the most serious confusion, and would infallibly cause a great increase in the vices of the people.[310] Now, it has always been suspected that, on an average, the male and female births are tolerably equal; but, until very recently, no one could tell whether or not they are precisely equal, or, if unequal, on which side there is an excess.[311] The births being the physical result of physical antecedents, it was clearly seen that the laws of the births must be in those antecedents; that is to say, that the causes of the proportion of the sexes must reside in the parents themselves.[312] Under these circumstances, the question arose, if it was not possible to elucidate this difficulty by our knowledge of animal physiology; for it was plausibly said, 'Since physiology is a study of the laws of the body,[313] and since all births are products resulting from the body, it follows that if we know the laws of the

[310] Thus we find that the Crusades, by diminishing the proportion of men to women in Europe, increased licentiousness. See a curious passage in *Sprengel*, *Histoire de la Médecine*, vol. ii. p. 376. In Yucatan, there is generally a considerable excess of women, and the result is prejudicial to morals. *Stephens's Central America*, vol. iii. pp. 380, 429. On the other hand, respecting the state of society produced by an excess of males, see *Mallet's Northern Antiquities*, p. 259; *Journal of Geographical Society*, vol. xv. p. 45, vol. xvi. p. 307; *Southey's Commonplace Book*, third series, p. 579.

[311] On this question a variety of conflicting statements may be seen in the old writers. Goodman, early in the seventeenth century, supposed that more females were born than males. *Southey's Commonplace Book*, third series, p. 696. Turgot (*Œuvres*, vol. ii. p. 247) rightly says, 'il naît un peu plus d'hommes que de femmes;' but the evidence was too incomplete to make this more than a lucky guess; and I find that even Herder, writing in 1785, takes for granted that the proportion was about equal: 'ein ziemliches Gleichmass in den Geburten beider Geschlechter' (*Ideen zur Geschichte*, vol. ii. p. 149), and was sometimes in favour of girls, 'ja, die Nachrichten mehrerer Reisenden machen es wahrscheinlich, dass in manchen dieser Gegenden wirklich mehr Töchter als Söhne geboren werden.'

[312] A question, indeed, has been raised as to the influence exercised by the state of the mind during the period of orgasm. But whatever this influence may be, it can only affect the subsequent birth through and by physical antecedents, which in every case must be regarded as the proximate cause. If, therefore, the influence were proved to exist, we should still have to search for physical laws: though such laws would of course be considered merely as secondary ones, resolvable into some higher generalization.

[313] Some writers treat physiology as a study of the laws of life. But this, looking at the subject as it now stands, is far too bold a step, and several branches of knowledge will have to be raised from their present empirical state, before the phenomena of life can be scientifically investigated. The more rational mode seems to be, to consider physiology and anatomy as correlative; the first forming the dynamical, and the second forming the statical part of the study of organic structure.

body, we shall know the laws of the birth.' This was the view taken by physiologists of our origin;[314] and this is precisely the view taken by metaphysicians of our history. Both parties believed that it was possible at once to rise to the cause of the phenomenon, and by studying its laws predict the phenomenon itself. The physiologist said, 'By studying individual bodies, and thus ascertaining the laws which regulate the union of the parents, I will discover the proportion of the sexes, because the proportion is merely the result to which the union gives rise.' Just in the same way, the metaphysician says, 'By studying individual minds, I will ascertain the laws which govern their movements; and in that way I will predict the movements of mankind, which are obviously compounded of the individual movements.'[315] These are the expectations which have been confidently held out, by physiologists respecting the laws of the sexes, and by metaphysicians respecting the laws of history. Towards the fulfilment, however, of these promises the metaphysicians have done absolutely nothing; nor have the physiologists been more successful, although their views have the support of anatomy, which admits of the employment of direct experiment, a resource unknown to metaphysics. But towards settling the present question, all this availed them nothing; and physiologists are not yet possessed of a single fact which throws any light on this problem: Is the number of male births equal to female births – is it greater, or is it less?

These are questions to which all the resources of physiologists, from Aristotle down to our own time, afford no means of reply.[316] And yet at the present day we, by the employment of what now seems a very natural method, are possessed of a truth which the united abilities of a long series of eminent men failed to discover. By the simple experiment of registering the number of births and their sexes; by extending this registration over several years, in different countries, – we have been able to eliminate all casual disturbances, and ascertain the existence of a law which, expressed in round numbers, is, that for every twenty girls there are born twenty-one boys: and we may confidently say, that although the operations of this law are of course liable to constant aberrations, the law itself

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[314] 'Voulez-vous savoir de quoi dépend le sexe des enfants? Fernel vous répond, sur la foi des anciens, qu'il dépend des qualités de la semence du père et de la mère.' *Renouard*, *Histoire de la Médecine*, Paris, 1846, vol. ii. p. 106; see also, at p. 185, the opinion of Hippocrates, adopted by Galen; and similar views in *Lepelletier*, *Physiologie Médicale*, vol. iv. p. 332, and *Sprengel*, *Hist. de la Médecine*, vol. i. pp. 252, 10, vol. ii. p. 115, vol. iv. p. 62. For further information as to the opinions which have been held respecting the origin of sexes, see *Beausobre*, *Histoire de Manichée*, vol. ii. p. 417; *Asiatic Researches*, vol. iii. pp. 358, 361; *Vishnu Purana*, p. 349; *Works of Sir William Jones*, vol. iii. p. 126; *Ritter's History of Ancient Philosophy*, vol. iii. p. 191; *Denham and Clapperton's Africa*, pp. 323, 324; *Maintenon*, *Lettres Inédites*, vol. ii. p. 62; and the view of Hohl (*Burdach's Physiologie*, vol. ii. p. 472), 'que les femmes chez lesquelles prédomine le système artériel procréent des garçons, au lieu que celles dont le système veineux a la prédominance mettent au monde des filles.' According to Anaxagoras the question was extremely simple: καὶ ἄρρενα μὲν ἀπὸ τῶν δεξιῶ,θήλεα δὲ ἀπὸ τῶν ἀριστερῶν. *Diog. Laert.* ii. 9, vol. i. p. 85.

[315] 'Le metaphysicien se voit comme la source de l'évidence et le confident de la nature: Moi seul, dit-il, je puis généraliser les idées, et découvrir le germe des événements qui se développent journellement dans le monde physique et moral; et c'est par moi seul que l'homme peut être éclairé.' *Helvetius*, *de l'Esprit*, vol. i. p. 86. Compare *Herder*, *Ideen zur Geschichte der Menschheit*, vol. ii. p. 105. Thus, too, M. Cousin (*Hist. de la Philosophie*, II. série, vol. i. p. 131) says, 'Le fait de la conscience transporté de l'individu dans l'espèce et dans l'histoire, est la clef de tous les développements de l'humanité.'

[316] Considering the very long period during which physiology has been studied, it is remarkable how little the physiologists have contributed towards the great and final object of all science, namely, the power of predicting events. To me it appears that the two principal causes of this are, the backwardness of chemistry, and the still extremely imperfect state of the microscope, which even now is so inaccurate an instrument, that when a high power is employed, little confidence can be placed in it; and the examination, for instance, of the spermatozoa has led to the most contradictory results. In regard to chemistry, MM. Robin and Verdeil, in their recent great work, have ably proved what manifold relations there are between it and the further progress of our knowledge of the animal frame; though I venture to think that these eminent writers have shown occasionally an undue disposition to limit the application of chemical laws to physiological phenomena. See *Robin et Verdeil*, *Chimie Anatomique et Physiologique*, Paris, 1853, vol. i. pp. 20, 34, 167, 337, 338, 437, 661, vol. ii. pp. 136, 137, 508, vol. iii. pp. 135, 144, 183, 281, 283, 351, 547. The increasing tendency of chemistry to bring under its control what are often supposed to be purely organic phenomena, is noticed cautiously in *Turner's Chemistry*, vol. ii. p. 1308, London, 1847; and boldly in *Liebig's Letters on Chemistry*, 1851, pp. 250, 251. The connexion between chemistry and physiology is touched on rather too hastily in *Bouilland*, *Philosophie Médicale*, pp. 160, 257; *Broussais*, *Examen des Doctrines Médicales*, vol. iii. p. 166; *Brodie's Lectures on Pathology*, p. 48; *Henle*, *Traité d'Anatomie*, vol. i. pp. 25, 26; *Feuchtersleben's Medical Psychology*, p. 88; but better in *Holland's Medical Notes*, 1839, p. 270, a thoughtful and suggestive work. On the necessity of chemistry for increasing our knowledge of embryology, compare *Wagner's Physiology*, pp. 131, 132 note, with *Burdach*, *Traité de Physiologie*, vol. iv. pp. 59, 168.

is so powerful, that we know of no country in which during a single year the male births have not been greater than the female ones.[317]

The importance and the beautiful regularity of this law make us regret that it still remains an empirical truth, not having yet been connected with the physical phenomena by which its operations are caused.[318] But this is immaterial to my present purpose, which is only to notice the method by which the discovery has been made. For this method is obviously analogous to that by which I propose to investigate the operations of the human mind; while the old and unsuccessful method is analogous to that employed by the metaphysicians. As long as physiologists attempted to ascertain the laws of the proportion of sexes by individual experiments, they effected absolutely nothing towards the end they hoped to achieve. But when men became dissatisfied with these individual experiments, and instead of them, began to collect observations less minute, but more comprehensive, then it was that the great law of nature, for which during many centuries they had vainly searched, first became unfolded to their view. Precisely in the same way, as long as the human mind is only studied according to the narrow and contracted method of metaphysicians, we have every reason for thinking that the laws which regulate its movements will remain unknown. If, therefore, we wish to effect anything of real moment, it becomes necessary that we should discard those old schemes, the insufficiency of which is demonstrated by experience as well as by reason; and that we should substitute in their place such a comprehensive survey of facts as will enable us to eliminate those disturbances which, owing to the impossibility of experiment, we shall never be able to isolate.

The desire that I feel to make the preliminary views of this Introduction perfectly clear, is my sole apology for having introduced a digression which, though adding nothing to the strength of the argument, may be found useful as illustrating it, and will at all events enable ordinary readers to appreciate the value of the proposed method. It now remains for us to ascertain the manner in which, by the application of this method, the laws of mental progress may be most easily discovered.

If, in the first place, we ask what this progress is, the answer seems very simple: that it is a two-fold progress, Moral and Intellectual; the first having more immediate relation to our duties, the second to our knowledge. This is a classification which has been frequently laid down, and with which most persons are familiar. And so far as history is a narration of results, there can be no doubt that the division is perfectly accurate. There can be no doubt that a people are not really advancing, if, on the one hand, their increasing ability is accompanied by increasing vice, or if, on the other hand,

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[317] It used to be supposed that some of the eastern countries formed an exception to this; but more precise observations have contradicted the loose statements of the earlier travellers, and in no part of the world, so far as our knowledge extends, are more girls born than boys; while in every part of the world for which we have statistical returns, there is a slight excess on the side of male births. Compare *Marsden's History of Sumatra*, p. 234; *Raffles' History of Java*, vol. i. pp. 81, 82; *Sykes on the Statistics of the Deccan*, in *Reports of British Association*, vol. vi. pp. 246, 261, 262; *Niebuhr*, *Description de l'Arabie*, p. 63; *Humboldt*, *Nouv. Espagne*, vol. i. p. 139; *McWilliam*, *Medical History of Expedition to the Niger*, p. 113; *Elliotson's Human Physiology*, p. 795; *Thomson's Hist. of Royal Society*, p. 531; *Sadler's Law of Population*, vol. i. pp. 507, 511, vol. ii. pp. 324, 335; *Paris and Fonblanque's Medical Jurisprudence*, vol. i. p. 259; *Journal of Statist. Soc.* vol. iii. pp. 263, 264, vol. xvii. pp. 46, 123; *Journal of Geographical Soc.* vol. xx. p. 17; *Fourth Report of British Association*, pp. 687, 689, *Report for* 1842, pp. 144, 145; *Transac. of Sections for* 1840, p. 174, *for* 1847, p. 96, *for* 1849, p. 87; *Dufau*, *Traité de Statistique*, pp. 24, 209, 210; *Burdach*, *Traité de Physiologie*, vol. ii. pp. 56, 57, 273, 274, 281, vol. v. p. 373; *Hawkins's Medical Statistics*, pp. 221, 222.

[318] In *Müller's Physiology*, vol. ii. p. 1657, a work of great authority, it is said, that 'the causes which determine the sex of the embryo are unknown, although it appears that the relative age of the parents has some influence over the sex of the offspring.' That the relative age of the parents does affect the sex of their children, may, from the immense amount of evidence now collected, be considered almost certain; but M. Müller, instead of referring to physiological writers, ought to have mentioned that the statisticians, and not the physiologists, were the first to make this discovery. On this curious question, see *Carpenter's Human Physiology*, p. 746; *Sadler's Law of Population*, vol. ii. pp. 333, 336, 342; *Journal of Statistical Society*, vol. iii. pp. 263, 264. In regard to animals below man, we find from numerous experiments, that among sheep and horses the age of the parents 'has a very great general influence upon the sex' of the offspring. *Elliotson's Physiology*, pp. 708, 709; and see *Cuvier*, *Progrès des Sciences Naturelles*, vol. ii. p. 406. As to the relation between the origin of sex and the laws of arrested development, compare *Geoffroy Saint-Hilaire*, *Hist. des Anomalies de l'Organisation*, vol. ii. pp. 33, 34, 73, vol. iii. p. 278, with *Lindley's Botany*, vol. ii. p. 81. In *Esquirol*, *Maladies Mentales*, vol. i. p. 302, there is a singular case recorded by Lamotte, which would seem to connect this question with pathological phenomena, though it is uncertain whether the epilepsy was an effect or a cognate symptom.

while they are becoming more virtuous, they likewise become more ignorant. This double movement, moral and intellectual, is essential to the very idea of civilization, and includes the entire theory of mental progress. To be willing to perform our duty is the moral part; to know how to perform it is the intellectual part: while the closer these two parts are knit together, the greater the harmony with which they work; and the more accurately the means are adapted to the end, the more completely will the scheme of our life be accomplished, and the more securely shall we lay a foundation for the further advancement of mankind.

A question, therefore, now arises of great moment: namely, which of these two parts or elements of mental progress is the most important. For the progress itself being the result of their united action, it becomes necessary to ascertain which of them works more powerfully, in order that we may subordinate the inferior element to the laws of the superior one. If the advance of civilization, and the general happiness of mankind, depend more on their moral feelings than on their intellectual knowledge, we must of course measure the progress of society by those feelings; while if, on the other hand, it depends principally on their knowledge, we must take as our standard the amount and success of their intellectual activity. As soon as we know the relative energy of these two components, we shall treat them according to the usual plan for investigating truth; that is to say, we shall look at the product of their joint action as obeying the laws of the more powerful agent, whose operations are casually disturbed by the inferior laws of the minor agent.

In entering into this inquiry, we are met by a preliminary difficulty, arising from the loose and careless manner in which ordinary language is employed on subjects that require the greatest nicety and precision. For the expression, Moral and Intellectual Progress, is suggestive of a serious fallacy. In the manner in which it is generally used, it conveys an idea that the moral and intellectual faculties of men are, in the advance of civilization, naturally more acute and more trustworthy than they were formerly. But this, though it may possibly be true, has never been proved. It may be that, owing to some physical causes still unknown, the average capacity of the brain is, if we compare long periods of time, becoming gradually greater; and that therefore the mind, which acts through the brain, is, even independently of education, increasing in aptitude and in the general competence of its views.[319] Such, however, is still our ignorance of physical laws, and so completely are we in the dark as to the circumstances which regulate the hereditary transmission of character, temperament,[320] and

[319] That the natural powers of the human brain are improving because they are capable of transmission, is a favourite doctrine with the followers of Gall, and is adopted by M. A. Comte (*Philosophie Positive*, vol. iv. pp. 384, 385); who, whoever, admits that it has never been sufficiently verified: 'sans que toutefois l'expérience ait encore suffisamment prononcé.' Dr. Prichard, whose habits of thought were very different, seems, nevertheless, inclined to lean in this direction; for his comparison of skulls led him to the conclusion, that the present inhabitants of Britain, 'either as the *result of many ages of greater intellectual cultivation*, or from some other cause, have, as I am persuaded, much more capacious braincases than their forefathers.' *Prichard's Physical History of Mankind*, vol. i. p. 305. Even if this were certain, it would not prove that the contents of the crania were altered, though it might create a presumption; and the general question must, I think, remain unsettled until the researches begun by Blumenbach, and recently continued by Morton, are carried out upon a scale far more comprehensive than has hitherto been attempted. Compare *Burdach*, *Traité de Physiologie*, vol. ii. p. 253; where, however, the question is not stated with sufficient caution.

[320] None of the laws of hereditary descent connected with the formation of character, have yet been generalized; nor is our knowledge much more advanced respecting the theory of temperaments, which still remains the principal obstacle in the way of the phrenologists. The difficulties attending the study of temperaments, and the obscurity in which this important subject is shrouded, may be estimated by whoever will compare what has been said upon it by the following writers: *Müller's Physiology*, vol. ii. pp. 1406–1410; *Elliotson's Human Physiology*, pp. 1059–1062; *Blainville*, *Physiologie Générale et Comparée*, vol. i. pp. 168, 264, 265, vol. ii. pp. 43, 130, 214, 328, 329, vol. iii. pp. 54, 74, 118, 148, 149, 284, 285; *Williams's Principles of Medicine*, pp. 16, 17, 112, 113; *Geoffroy Saint-Hilaire*, *Anomalies de l'Organisation*, vol. i. pp. 186, 190; *Broussais*, *Examen des Doctrines Médicales*, vol. i. pp. 204, 205, vol. iii. p. 276; *Renouard*, *Hist. de la Médecine*, vol. i. p. 326; *Sprengel*, *Hist. de la Médecine*, vol. i. p. 380, vol. ii. p. 408, vol. iii. p. 21, vol. v. p. 325, vol. vi. p. 492; *Esquirol*, *Maladies Mentales*, vol. i. pp. 39, 226, 429, 594, vol. ii. p. 29; *Lepelletier*, *Physiol. Médicale*, vol. i. pp. 139, 281, vol. iii. pp. 372–429, vol. iv. pp. 93, 123, 133, 143, 148, 177; *Henle*, *Anatomie Générale*, vol. i. p. 474, vol. ii. pp. 288, 289, 316; *Bichat*, *Anatomie Générale*, vol. i. p. 207, vol. ii. p. 444, vol. iii. pp. 310, 507, vol. iv. pp. 281, 399, 400, 504; *Bichat sur la Vie*, pp. 80, 81, 234, 235; *Phillips on Scrofula*, p. 9; *Feuchtersleben's Medical Psychology*, pp. 143–145; *Œuvres de Fontenelle*, Paris, 1766, vol. v. p. 110; *Cullen's Works*, Edinb. 1827, vol. i. pp. 214–221; *Cabanis*, *Rapports du Physique et du Moral*, pp. 76–83, 229–261, 520–533; *Noble on the Brain*, pp. 370–376; *Combe's North America*, vol. i. pp. 126–128. Latterly, attention has been paid to the chemistry of the blood as it varies in the various temperaments; and this seems a more satisfactory method than the old plan of

other personal peculiarities, that we must consider this alleged progress as a very doubtful point; and, in the present state of our knowledge, we cannot safely assume that there has been any permanent improvement in the moral or intellectual faculties of man, nor have we any decisive ground for saying that those faculties are likely to be greater in an infant born in the most civilized part of Europe, than in one born in the wildest region of a barbarous country.[321]

Whatever, therefore, the moral and intellectual progress of men may be, it resolves itself not into a progress of natural capacity,[322] but into a progress, if I may so say, of opportunity; that is, an improvement in the circumstances under which that capacity after birth comes into play. Here, then, lies the gist of the whole matter. The progress is one, not of internal power, but of external advantage. The child born in a civilized land is not likely, as such, to be superior to one born among barbarians; and the difference which ensues between the acts of the two children will be caused, so far as we know, solely by the pressure of external circumstances; by which I mean the surrounding opinions, knowledge, associations; in a word, the entire mental atmosphere in which the two children are respectively nurtured.

On this account it is evident, that if we look at mankind in the aggregate, their moral and intellectual conduct is regulated by the moral and intellectual notions prevalent in their own time. There are, of course, many persons who will rise above those notions, and many others who will sink below them. But such cases are exceptional, and form a very small proportion of the total amount of those who are nowise remarkable either for good or for evil. An immense majority of men must always remain in a middle state, neither very foolish nor very able, neither very virtuous nor very vicious, but slumbering on in a peaceful and decent mediocrity, adopting without much difficulty the current opinions of the day, making no inquiry, exciting no scandal, causing no wonder, just holding themselves on a level with their generation, and noiselessly conforming to the standard of morals and of knowledge common to the age and country in which they live.

Now, it requires but a superficial acquaintance with history to be aware that this standard is constantly changing, and that it is never precisely the same even in the most similar countries, or in two successive generations in the same country. The opinions which are popular in any nation vary in many respects almost from year to year; and what in one period is attacked as a paradox or a heresy, is in another period welcomed as a sober truth; which, however, in its turn is replaced by some subsequent novelty. This extreme mutability in the ordinary standard of human actions shows that the conditions on which the standard depends must themselves be very mutable; and those conditions,

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merely describing the obvious symptoms of the temperament. *Clark on Animal Physiology*, in *Fourth Report of the British Association*, p. 126; *Simon's Animal Chemistry*, vol. i. p. 236; *Wagner's Physiology*, p. 262.

[321] We often hear of hereditary talents, hereditary vices, and hereditary virtues; but whoever will critically examine the evidence will find that we have no proof of their existence. The way in which they are commonly proved is in the highest degree illogical; the usual course being for writers to collect instances of some mental peculiarity found in a parent and in his child, and then to infer that the peculiarity was bequeathed. By this mode of reasoning we might demonstrate any proposition; since in all large fields of inquiry there are a sufficient number of empirical coincidences to make a plausible case in favour of whatever view a man chooses to advocate. But this is not the way in which truth is discovered; and we ought to inquire not only how many instances there are of hereditary talents, &c. but how many instances there are of such qualities not being hereditary. Until something of this sort is attempted, we can know nothing about the matter inductively: while, until physiology and chemistry are much more advanced, we can know nothing about it deductively.These considerations ought to prevent us from receiving statements (*Taylor's Medical Jurisprudence*, pp. 644, 678, and many other books) which positively affirm the existence of hereditary madness and hereditary suicide; and the same remark applies to hereditary disease (on which see some admirable observations in *Phillips on Scrofula*, pp. 101–120, London, 1846); and with still greater force does it apply to hereditary vices and hereditary virtues; inasmuch as ethical phenomena have not been registered as carefully as physiological ones, and therefore our conclusions respecting them are even more precarious.

[322] To what has been already stated, I will add the opinions of two of the most profound among modern thinkers. 'Men, I think, have been much the same for natural endowments in all times.' *Conduct of the Understanding*, in *Locke's Works*, vol. ii. p. 361. 'Les dispositions primitives agissent également chez les peuples barbares et chez les peuples policés; ils sont vraisemblablement les mêmes dans tous les lieux et dans tous les tems… Plus il y aura d'hommes, et plus vous aurez de grands hommes ou d'hommes propres à devenir grands.' *Progrès de l'Esprit Humain*, in *Œuvres de Turgot*, vol. ii. p. 264. The remarks of Dr. Brown (*Lectures on the Mind*, p. 57), if I rightly understand his rhetorical language, apply not to natural capacity, but to that which is acquired: see the end of his ninth Lecture.

whatever they may be, are evidently the originators of the moral and intellectual conduct of the great average of mankind.

Here, then, we have a basis on which we can safely proceed. We know that the main cause of human actions is extremely variable; we have only, therefore, to apply this test to any set of circumstances which are supposed to be the cause, and if we find that such circumstances are not very variable, we must infer that they are not the cause we are attempting to discover.

Applying this test to moral motives, or to the dictates of what is called moral instinct, we shall at once see how extremely small is the influence those motives have exercised over the progress of civilization. For there is, unquestionably, nothing to be found in the world which has undergone so little change as those great dogmas of which moral systems are composed. To do good to others; to sacrifice for their benefit your own wishes; to love your neighbour as yourself; to forgive your enemies; to restrain your passions; to honour your parents; to respect those who are set over you: these, and a few others, are the sole essentials of morals; but they have been known for thousands of years, and not one jot or tittle has been added to them by all the sermons, homilies, and text-books which moralists and theologians have been able to produce.[323]

But, if we contrast this stationary aspect of moral truths with the progressive aspect of intellectual truths, the difference is indeed startling.[324] All the great moral systems which have exercised much influence have been fundamentally the same; all the great intellectual systems have been fundamentally different. In reference to our moral conduct, there is not a single principle now known to the most cultivated Europeans, which was not likewise known to the ancients. In reference to the conduct of our intellect, the moderns have not only made the most important additions to every department of knowledge that the ancients ever attempted to study, but besides this, they have upset and revolutionized the old methods of inquiry; they have consolidated into one great scheme all those resources of induction which Aristotle alone dimly perceived; and they have created sciences, the faintest idea of which never entered the mind of the boldest thinker antiquity produced.

These are, to every educated man, recognized and notorious facts; and the inference to be drawn from them is immediately obvious. Since civilization is the product of moral and intellectual agencies, and since that product is constantly changing, it evidently cannot be regulated by the stationary agent; because, when surrounding circumstances are unchanged, a stationary agent can

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[323] That the system of morals propounded in the New Testament contained no maxim which had not been previously enunciated, and that some of the most beautiful passages in the Apostolic writings are quotations from pagan authors, is well known to every scholar; and so far from supplying, as some suppose, an objection against Christianity, it is a strong recommendation of it, as indicating the intimate relation between the doctrines of Christ and the moral sympathies of mankind in different ages. But to assert that Christianity communicated to man moral truths previously unknown, argues, on the part of the assertor, either gross ignorance or else wilful fraud. For evidence of the knowledge of moral truths possessed by barbarous nations, independently of Christianity, and for the most part previous to its promulgation, compare *Mackay's Religious Development*, vol. ii. pp. 376–380; *Mure's Hist. of Greek Literature*, vol. ii. p. 398, vol. iii. p. 380; *Prescott's History of Mexico*, vol. i. p. 31; *Elphinstone's History of India*, p. 47; *Works of Sir W. Jones*, vol. i. pp. 87, 168, vol. iii. pp. 105, 114; *Mill's History of India*, vol. i. p. 419; *Bohlen*, *das alte Indien*, vol. i. pp. 364–366; *Beausobre*, *Histoire de Manichée*, vol. i. pp. 318, 319; *Coleman's Mythology of the Hindus*, p. 193; *Transac. of Soc. of Bombay*, vol. iii. p. 198; *Transac. of Asiatic Society*, vol. i. p. 5, vol. iii. pp. 283, 284; *Asiatic Researches*, vol. vi. p. 271, vol. vii. p. 40, vol. xvi. pp. 130, 277, vol. xx. pp. 460, 461; *The Dabistan*, vol. i. pp. 328, 338; *Catlin's North-American Indians*, vol. ii. p. 243; *Syme's Embassy to Ava*, vol. ii. p. 389; *Davis's Chinese*, vol. i. p. 196, vol. ii. pp. 136, 233; *Journal Asiatique*, I. série, vol. iv. p. 77, Paris, 1824.

[324] Sir James Mackintosh was so struck by the stationary character of moral principles, that he denies the possibility of their advance, and boldly affirms that no further discoveries can be made in morals: 'Morality admits no discoveries… More than three thousand years have elapsed since the composition of the Pentateuch; and let any man, if he is able, tell me in what important respect the rule of life has varied since that distant period. Let the Institutes of Menu be explored with the same view; we shall arrive at the same conclusion. Let the books of false religion be opened; it will be found that their moral system is, in all its grand features, the same… The fact is evident that no improvements have been made in practical morality… The facts which lead to the formation of moral rules are as accessible, and must be as obvious, to the simplest barbarian as to the most enlightened philosopher… The case of the physical and speculative sciences is directly opposite. There the facts are remote and scarcely accessible… From the countless variety of the facts with which they are conversant, it is impossible to prescribe any bounds to their future improvement. It is otherwise with morals. They have hitherto been stationary; and, in my opinion, they are likely for ever to continue so.' *Life of Mackintosh, edited by his Son*, London, 1835, vol. i. pp. 119–122. Condorcet (*Vie de Turgot*, p. 180) says, 'La morale de toutes les nations a été la même;' and Kant (*Logik*, in *Kant's Werke*, vol. i. p. 356), 'In der Moral-philosophie sind wir nicht weiter gekommen, als die Alten.'

only produce a stationary effect. The only other agent is the intellectual one; and that this is the real mover may be proved in two distinct ways: first, because being, as we have already seen, either moral or intellectual, and being, as we have also seen, not moral, it must be intellectual; and, secondly, because the intellectual principle has an activity and a capacity for adaptation, which, as I undertake to show, is quite sufficient to account for the extraordinary progress that, during several centuries, Europe has continued to make.

Such are the main arguments by which my view is supported; but there are also other and collateral circumstances which are well worthy of consideration. The first is, that the intellectual principle is not only far more progressive than the moral principle, but is also far more permanent in its results. The acquisitions made by the intellect are, in every civilized country, carefully preserved, registered in certain well-understood formulas, and protected by the use of technical and scientific language; they are easily handed down from one generation to another, and thus assuming an accessible, or, as it were, a tangible form, they often influence the most distant posterity, they become the heirlooms of mankind, the immortal bequest of the genius to which they owe their birth. But the good deeds effected by our moral faculties are less capable of transmission; they are of a more private and retiring character; while, as the motives to which they owe their origin are generally the result of self-discipline and of self-sacrifice, they have to be worked out by every man for himself; and thus, begun by each anew, they derive little benefit from the maxims of preceding experience, nor can they well be stored up for the use of future moralists. The consequence is, that although moral excellence is more amiable, and to most persons more attractive, than intellectual excellence, still, it must be confessed that, looking at ulterior results, it is far less active, less permanent, and, as I shall presently prove, less productive of real good. Indeed, if we examine the effects of the most active philanthropy, and of the largest and most disinterested kindness, we shall find that those effects are, comparatively speaking, short-lived; that there is only a small number of individuals they come in contact with and benefit; that they rarely survive the generation which witnessed their commencement; and that, when they take the more durable form of founding great public charities, such institutions invariably fall, first into abuse, then into decay, and after a time are either destroyed, or perverted from their original intention, mocking the effort by which it is vainly attempted to perpetuate the memory even of the purest and most energetic benevolence.

These conclusions are no doubt very unpalatable; and what makes them peculiarly offensive is, that it is impossible to refute them. For the deeper we penetrate into this question, the more clearly shall we see the superiority of intellectual acquisitions over moral feeling.[325] There is no instance on record of an ignorant man who, having good intentions, and supreme power to enforce them, has not done far more evil than good. And whenever the intentions have been very eager, and the power very extensive, the evil has been enormous. But if you can diminish the sincerity of that man, if you can mix some alloy with his motives, you will likewise diminish the evil which he works. If he is selfish as well as ignorant, it will often happen that you may play off his vice against his ignorance, and by exciting his fears restrain his mischief. If, however, he has no fear, if he is entirely unselfish, if his sole object is the good of others, if he pursues that object with enthusiasm, upon a large scale, and with disinterested zeal, then it is that you have no check upon him, you have no means of preventing the calamities which, in an ignorant age, an ignorant man will be sure to inflict. How entirely this is verified by experience, we may see in studying the history of religious persecution. To punish even a single man for his religious tenets, is assuredly a crime of the deepest dye; but to punish a large body of men, to persecute an entire sect, to attempt to extirpate opinions, which, growing out of the state of society in which they arise, are themselves a manifestation of the marvellous and luxuriant fertility of the human mind, – to do this is not only one of the most pernicious, but one of the most

[325] One part of the argument is well stated by Cuvier, who says, 'Le bien que l'on fait aux hommes, quelque grand qu'il soit, est toujours passager; les vérités qu'on leur laisse sont éternelles.' *Cuvier*, *Eloges Historiques*, vol. ii. p. 304.

foolish acts that can possibly be conceived. Nevertheless, it is an undoubted fact that an overwhelming majority of religious persecutors have been men of the purest intentions, of the most admirable and unsullied morals. It is impossible that this should be otherwise. For they are not bad-intentioned men, who seek to enforce opinions which they believe to be good. Still less are they bad men, who are so regardless of temporal considerations as to employ all the resources of their power, not for their own benefit, but for the purpose of propagating a religion which they think necessary to the future happiness of mankind. Such men as these are not bad, they are only ignorant; ignorant of the nature of truth, ignorant of the consequences of their own acts. But, in a moral point of view, their motives are unimpeachable. Indeed, it is the very ardour of their sincerity which warms them into persecution. It is the holy zeal by which they are fired that quickens their fanaticism into a deadly activity. If you can impress any man with an absorbing conviction of the supreme importance of some moral or religious doctrine; if you can make him believe that those who reject that doctrine are doomed to eternal perdition; if you then give that man power, and by means of his ignorance blind him to the ulterior consequences of his own act, – he will infallibly persecute those who deny his doctrine; and the extent of his persecution will be regulated by the extent of his sincerity. Diminish the sincerity, and you will diminish the persecution: in other words, by weakening the virtue you may check the evil. This is a truth of which history furnishes such innumerable examples, that to deny it would be not only to reject the plainest and most conclusive arguments, but to refuse the concurrent testimony of every age. I will merely select two cases, which, from the entire difference in their circumstances, are very apposite as illustrations: the first being from the history of Paganism, the other from the history of Christianity; and both proving the inability of moral feelings to control religious persecution.

I. The Roman emperors, as is well known, subjected the early Christians to persecutions, which, though they have been exaggerated, were frequent and very grievous. But what to some persons must appear extremely strange, is, that among the active authors of these cruelties, we find the names of the best men who ever sat on the throne; while the worst and most infamous princes were precisely those who spared the Christians, and took no heed of their increase. The two most thoroughly depraved of all the emperors were certainly Commodus and Elagabalus; neither of whom persecuted the new religion, or indeed adopted any measures against it. They were too reckless of the future, too selfish, too absorbed in their own infamous pleasures, to mind whether truth or error prevailed; and being thus indifferent to the welfare of their subjects, they cared nothing about the progress of a creed, which they, as Pagan emperors, were bound to regard as a fatal and impious delusion. They, therefore, allowed Christianity to run its course, unchecked by those penal laws which more honest, but more mistaken, rulers would assuredly have enacted.[326] We find, accordingly, that the great enemy of Christianity was Marcus Aurelius: a man of kindly temper, and of fearless, unflinching honesty, but whose reign was characterized by a persecution from which he would have refrained had he been less in earnest about the religion of his fathers.[327] And to complete the argument, it may be added, that the last and one of the most strenuous of the opponents of Christianity, who occupied the throne of

[326] 'The first year of Commodus must be the epocha of the toleration. From all these authorities, it appears beyond exception, that Commodus put a stop to the persecution in the first year of his reign… Not one writer, either heathen or Christian, makes Commodus a persecutor.' *Letters concerning the Thundering Legion*, in *Moyle's Works*, vol. ii. p. 266, London, 1726. 'Heliogabalus also, though in other respects the most infamous of all princes, and perhaps the most odious of all mortals, showed no marks of bitterness or aversion to the disciples of Jesus.' *Mosheim's Eccl. History*, vol. i. p. 66: see also *Milman's Hist. of Christianity*, London, 1840, vol. ii. p. 225.

[327] Dr. Milman (*History of Christianity*, 1840, vol. ii. p. 159) says, 'A blameless disciple in the severest school of philosophic morality, the austerity of Marcus rivalled that of the Christians in its contempt of the follies and diversions of life; yet his native kindliness of disposition was not hardened or embittered by the severity or the pride of his philosophy. With Aurelius, nevertheless, Christianity found not only a fair and high-minded competitor for the command of the human mind; not only a rival in the exaltation of the soul of man to higher views and more dignified motives; but a violent and intolerant persecutor.' M. Guizot compares him with Louis IX. of France; and certainly there was in both an evident connexion between sincerity and persecution: 'Marc Auréle et saint Louis sont peut-être les deux seuls princes qui, en toute occasion, aient fait de leurs croyances morales la première règle de leur conduite: Marc Auréle, stoicien; saint Louis, chrétien.' *Guizot*, *Civilisation en France*, vol. iv. p. 142. Even Duplessis Mornay (*Mém.* vol. iv. p. 374) calls him 'le meilleur des empereurs payens;' and Ritter (*Hist. of Philos.* vol. iv. p. 222), 'the virtuous and noble emperor.'

the Cæsars, was Julian: a prince of eminent probity, whose opinions are often attacked, but against whose moral conduct even calumny itself has hardly breathed a suspicion.[328]

II. The second illustration is supplied by Spain; a country of which it must be confessed, that in no other have religious feelings exercised such sway over the affairs of men. No other European nation has produced so many ardent and disinterested missionaries, zealous self-denying martyrs, who have cheerfully sacrificed their lives in order to propagate truths which they thought necessary to be known. Nowhere else have the spiritual classes been so long in the ascendant; nowhere else are the people so devout, the churches so crowded, the clergy so numerous. But the sincerity and the honesty of purpose by which the Spanish people, taken as a whole, have always been marked, have not only been unable to prevent religious persecution, but have proved the means of encouraging it. If the nation had been more lukewarm, it would have been more tolerant. As it was, the preservation of the faith became the first consideration; and everything being sacrificed to this one object, it naturally happened that zeal begat cruelty, and the soil was prepared in which the Inquisition took root and flourished. The supporters of that barbarous institution were not hypocrites, but enthusiasts. Hypocrites are for the most part too supple to be cruel. For cruelty is a stern and unbending passion; while hypocrisy is a fawning and flexible art, which accommodates itself to human feelings, and flatters the weakness of men in order that it may gain its own ends. In Spain, the earnestness of the nation, being concentrated on a single topic, carried everything before it; and hatred of heresy becoming a habit, persecution of heresy was thought a duty. The conscientious energy with which that duty was fulfilled is seen in the history of the Spanish Church. Indeed, that the inquisitors were remarkable for an undeviating and incorruptible integrity, may be proved in a variety of ways, and from different and independent sources of evidence. This is a question to which I shall hereafter return; but there are two testimonies which I cannot omit, because, from the circumstances attending them, they are peculiarly unimpeachable. Llorente, the great historian of the Inquisition, and its bitter enemy, had access to its private papers; and yet, with the fullest means of information, he does not even insinuate a charge against the moral character of the inquisitors; but while execrating the cruelty of their conduct, he cannot deny the purity of their intentions.[329] Thirty years earlier, Townsend, a clergyman of the Church of England, published his valuable work on Spain;[330] and though, as a Protestant and an Englishman, he had every reason to be prejudiced against the infamous system which he describes, he also can bring no charge against those who upheld it; but having occasion to mention its establishment at Barcelona, one of its most important branches, he makes the remarkable admission, that all its members are men of worth, and that most of them are of distinguished humanity.[331]

These facts, startling as they are, form a very small part of that vast mass of evidence which history contains, and which decisively proves the utter inability of moral feelings to diminish religious persecution. The way in which the diminution has been really effected by the mere progress of intellectual acquirements, will be pointed out in another part of this volume; when we shall see that the great antagonist of intolerance is not humanity, but knowledge. It is to the diffusion of knowledge,

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[328] Neander (*History of the Church*, vol. i. p. 122) observes, that the best emperors opposed Christianity, and that the worst ones were indifferent to its encroachments. The same remark, in regard to Marcus and Commodus, is made by Gibbon (*Decline and Fall*, chap. xvi. p. 220, Lond. 1836). Another writer, of a very different character, ascribes this peculiarity to the wiles of the devil: 'In the primitive times, it is observed that the best emperors were some of them stirred up by Satan to be the bitterest persecutors of the Church.' *Memoirs of Colonel Hutchinson*, p. 85.

[329] By which, indeed, he is sorely puzzled. 'On reconnaîtra mon impartialité dans quelques circonstances où je fais remarquer chez les inquisiteurs des dispositions généreuses; ce qui me porte à croire que les atroces sentences rendues par le Saint-Office, sont plutôt une conséquence de ses lois organiques, qu'un effet du caractère particulier de ses membres.' *Llorente*, *Histoire Critique de l'Inquisition d'Espagne*, vol. i. p. xxiii.: compare vol. ii. pp. 267, 268, vol. iv. p. 153.

[330] Highly spoken of by the late Blanco White, a most competent judge. See *Doblado's Letters from Spain*, p. 5.

[331] 'It is, however, universally acknowledged, for the credit of the corps at Barcelona, that all its members are men of worth, and most of them distinguished for humanity.' *Townsend's Journey through Spain, in 1786 and 1787*, vol. i. p. 122, Lond. 1792.

and to that alone, that we owe the comparative cessation of what is unquestionably the greatest evil men have ever inflicted on their own species. For that religious persecution is a greater evil than any other, is apparent, not so much from the enormous and almost incredible number of its known victims,[332] as from the fact that the unknown must be far more numerous, and that history gives no account of those who have been spared in the body, in order that they might suffer in the mind. We hear much of martyrs and confessors – of those who were slain by the sword, or consumed in the fire; but we know little of that still larger number who, by the mere threat of persecution, have been driven into an outward abandonment of their real opinions; and who, thus forced into an apostasy the heart abhors, have passed the remainder of their life in the practice of a constant and humiliating hypocrisy. It is this which is the real curse of religious persecution. For in this way, men being constrained to mask their thoughts, there arises a habit of securing safety by falsehood, and of purchasing impunity with deceit. In this way fraud becomes a necessary of life; insincerity is made a daily custom; the whole tone of public feeling is vitiated, and the gross amount of vice and of error fearfully increased. Surely, then, we have reason to say, that, compared to this, all other crimes are of small account; and we may well be grateful for that increase of intellectual pursuits which has destroyed an evil that some among us would even now willingly restore.

The principle I am advocating is of such immense importance in practice as well as in theory, that I will give yet another instance of the energy with which it works. The second greatest evil known to mankind – the one by which, with the exception of religious persecution, most suffering has been caused – is, unquestionably, the practice of war. That this barbarous pursuit is, in the progress of society, steadily declining, must be evident, even to the most hasty reader of European history.[333] If we compare one country with another, we shall find that for a very long period wars have been becoming less frequent; and now so clearly is the movement marked, that, until the late commencement of hostilities, we had remained at peace for nearly forty years: a circumstance unparalleled, not only in our own country, but also in the annals of every other country which has been important enough to play a leading part in the affairs of the world.[334] The question arises, as to what share our moral feelings have had in bringing about this great improvement. And if this question is answered, not according to preconceived opinions, but according to the evidence we possess, the answer will certainly be, that those feelings have had no share at all. For it surely will not be pretended that the moderns have made any discoveries respecting the moral evils of war. On this head nothing is now known that has not been known for many centuries. That defensive wars are just, and that offensive wars are unjust, are the only two principles which, on this subject, moralists are able to teach. These two principles were as clearly laid down, as well understood, and as universally admitted, in the Middle Ages, when there was never a week without war, as they are at the present moment, when war is deemed a rare and singular occurrence. Since, then, the actions of men respecting war have been gradually changing, while their moral knowledge respecting it has not been changing, it is palpably

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[332] In 1546, the Venetian ambassador at the court of the Emperor Charles V. stated, in an official report to his own government on his return home, 'that in Holland and in Friesland, more than 30,000 persons have suffered death at the hands of justice for Anabaptist errors.' *Correspondence of Charles V. and his Ambassadors*, edited by William Bradford, Lond. 8vo, 1850, p. 471. In Spain, the Inquisition, during the eighteen years of Torquemada's ministry, punished, according to the lowest estimate, upwards of 105,000 persons, of whom 8,800 were burned. *Prescott's History of Ferdinand and Isabella*, vol. i. p. 265. In Andalusia alone, during a single year, the Inquisition put to death 2,000 Jews, 'besides 17,000 who underwent some form of punishment less severe than that of the stake.' *Ticknor's History of Spanish Literature*, vol. i. p. 410. For other statistical evidence on this horrible subject, see *Llorente*, *Histoire de l'Inquisition*, vol. i. pp. 160, 229, 238, 239, 279, 280, 406, 407, 455, vol. ii. pp. 77, 116, 376, vol. iv. p. 31; and, above all, the summary at pp. 242–273.

[333] On the diminished love of war, which is even more marked than the actual diminution of war, see some interesting remarks in *Comte*, *Philosophie Positive*, vol. iv. pp. 488, 713, vol. vi. pp. 68, 424–436, where the antagonism between the military spirit and the industrial spirit is, on the whole, well worked out; though some of the leading phenomena have escaped the attention of this eminent philosopher, from his want of acquaintance with the history and present state of political economy.

[334] In *Pellew's Life of Sidmouth*, 1847, vol. iii. p. 137, this prolonged peace is gravely ascribed to 'the wisdom of the adjustment of 1815;' in other words, to the proceedings of the Congress of Vienna!

evident that the changeable effect has not been produced by the unchangeable cause. It is impossible to conceive an argument more decisive than this. If it can be proved that, during the last thousand years, moralists or theologians have pointed out a single evil caused by war, the existence of which was unknown to their predecessors, – if this can be proved, I will abandon the view for which I am contending. But if, as I most confidently assert, this cannot be proved, then it must be conceded that, no additions having been made on this subject to the stock of morals, no additions can have been made to the result which the morals produce.[335]

Thus far as to the influence exercised by moral feelings in increasing our distaste for war. But if, on the other hand, we turn to the human intellect, in the narrowest sense of the term, we shall find that every great increase in its activity has been a heavy blow to the warlike spirit. The full evidence for this I shall hereafter detail at considerable length; and in this Introduction I can only pretend to bring forward a few of those prominent points, which, being on the surface of history, will be at once understood.

Of these points, one of the most obvious is, that every important addition made to knowledge increases the authority of the intellectual classes, by increasing the resources which they have to wield. Now, the antagonism between these classes and the military class is evident: it is the antagonism between thought and action, between the internal and the external, between argument and violence, between persuasion and force; or, to sum up the whole, between men who live by the pursuits of peace and those who live by the practice of war. Whatever, therefore, is favourable to one class, is manifestly unfavourable to the other. Supposing the remaining circumstances to be the same, it must happen, that as the intellectual acquisitions of a people increase, their love of war will diminish; and if their intellectual acquisitions are very small, their love of war will be very great.[336] In perfectly barbarous countries, there are no intellectual acquisitions; and the mind being a blank and dreary waste, the only resource is external activity,[337] the only merit personal courage. No account is made of any man, unless he has killed an enemy; and the more he has killed, the greater the reputation he enjoys.[338]

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[335] Unless more zeal has been displayed in the diffusion of moral and religious principles; in which case it would be possible for the principles to be stationary, and yet their effects be progressive. But so far from this, it is certain that in the Middle Ages there were, relatively to the population, more churches than there are now; the spiritual classes were far more numerous, the proselyting spirit far more eager, and there was a much stronger determination to prevent purely scientific inferences from encroaching on ethical ones. Indeed, during the Middle Ages, the moral and religious literature outweighed all the profane literature put together; and surpassed it, not only in bulk, but also in the ability of its cultivators. Now, however, the generalizations of moralists have ceased to control the affairs of men, and have made way for the larger doctrine of expediency, which includes all interests and all classes. Systematic writers on morals reached their zenith in the thirteenth century, fell off rapidly after that period, were, as Coleridge well says, opposed by 'the genius of Protestantism:' and, by the end of the seventeenth century, became extinct in the most civilized countries; the *Ductor Dubitantium* of Jeremy Taylor being the last comprehensive attempt of a man of genius to mould society solely according to the maxims of moralists. Compare two interesting passages in *Mosheim's Ecclesiast. Hist.*, vol. i. p. 338, and *Coleridge's Friend*, vol. iii. p. 104.

[336] Herder boldly asserts that man originally, and by virtue of his organization, is peaceably disposed; but this opinion is decisively refuted by the immense additions which, since the time of Herder, have been made to our knowledge of the feelings and habits of savages. 'Indessen ist's wahr, dass der Bau des Menschen vorzüglich auf die Vertheidigung, nicht auf den Angriff gerichtet ist: in diesem muss ihm die Kunst zu Hülfe kommen, in jener aber ist er von Natur das kräftigste Geschöpf der Erde. Seine Gestalt selbst lehret ihn also Friedlichkeit, nicht räuberische Mordverwüstung, – der Humanität erstes Merkmal.' *Ideen zur Geschichte*, vol. i. p. 185.

[337] Hence, no doubt, that acuteness of the senses, natural, and indeed necessary, to an early state of society, and which, being at the expense of the reflecting faculties, assimilates man to the lower animals. See *Carpenter's Human Physiology*, p. 404; and a fine passage in *Herder's Ideen zur Geschichte*, vol. ii. p. 12: 'Das abstehende thierische Ohr, das gleichsam immer lauscht und horchet, das kleine scharfe Auge, das in der weitesten Ferne den kleinsten Rauch oder Staub gewahr wird, der weisse hervorbleckende, knochenbenagende Zahn, der dicke Hals und die zurückgebogene Stellung ihres Kopfes auf demselben.' Compare *Prichard's Physical Hist. of Mankind*, vol. i. pp. 292, 293; *Azara*, *Amérique Méridionale*, vol. ii. p. 18; *Wrangel's Polar Expedition*, p. 384; *Pallme's Travels in Kordofan*, pp. 132, 133.

[338] 'Among some Macedonian tribes, the man who had never slain an enemy was marked by a degrading badge.' *Grote's History of Greece*, vol. xi. p. 397. Among the Dyaks of Borneo, 'a man cannot marry until he has procured a human head; and he that has several may be distinguished by his proud and lofty bearing, for it constitutes his patent of nobility.' *Earl's Account of Borneo*, in *Journal of Asiatic Society*, vol. iv. p. 181. See also *Crawfurd on Borneo*, in *Journal of Geog. Soc.*, vol. xxiii. pp. 77, 80. And for similar instances of this absorption of all other ideas into warlike ones, compare *Journal of Geog. Soc.*, vol. x. p. 357; *Mallet's Northern Antiquities*, pp. 158, 159, 195; *Thirlwall's Hist. of Greece*, vol. i. pp. 226, 284, vol. viii. p. 209; *Henderson's History of Brazil*, p. 475; *Southey's History of Brazil*, vol. i. pp. 126, 248; *Asiatic Researches*, vol. ii. p. 188, vol. vii. p. 193; *Transactions of Bombay Society*, vol. ii. pp. 51, 52;

This is the purely savage state; and it is the state in which military glory is most esteemed, and military men most respected.[339] From this frightful debasement, even up to the summit of civilization, there is a long series of consecutive steps; gradations, at each of which something is taken from the dominion of force, and something given to the authority of thought. Slowly, and one by one, the intellectual and pacific classes begin to arise; at first held in great contempt by warriors, but nevertheless gradually gaining ground, increasing in number and in power, and at each increase weakening that old military spirit, in which all other tendencies had formerly been absorbed. Trade, commerce, manufactures, law, diplomacy, literature, science, philosophy, – all these things, originally unknown, became organized into separate studies, each study having a separate class, and each class insisting on the importance of its own pursuit. Of these classes, some are, no doubt, less pacific than others; but even those which are the least pacific, are, of course, more so than men whose associations are entirely military, and who see in every fresh war that chance of personal distinction, from which, during peace, they are altogether debarred.[340]

Thus it is that, as civilization advances, an equipoise is established, and military ardour is balanced by motives which none but a cultivated people can feel. But among a people whose intellect is not cultivated, such a balance can never exist. Of this we see a good illustration in the history of the present war.[341] For the peculiarity of the great contest in which we are engaged is, that it was produced, not by the conflicting interests of civilized countries, but by a rupture between Russia and Turkey, the two most barbarous monarchies now remaining in Europe. This is a very significant fact. It is highly characteristic of the actual condition of society, that a peace of unexampled length should have been broken, not, as former peaces were broken, by a quarrel between two civilized nations, but by the encroachments of the uncivilized Russians on the still more uncivilized Turks. At an earlier period, the influence of intellectual, and therefore pacific, habits was indeed constantly increasing, but was still too weak, even in the most advanced countries, to control the old warlike habits: hence there arose a desire for conquest, which often outweighed all other feelings, and induced great nations like France and England to attack each other on the slightest pretence, and seek every opportunity of gratifying the vindictive hatred with which both contemplated the prosperity of their neighbour. Such, however, is now the progress of affairs, that these two nations, laying aside the peevish and irritable jealousy they once entertained, are united in a common cause, and have drawn the sword, not for selfish purposes, but to protect the civilized world against the incursions of a barbarous foe.

This is the leading feature which distinguishes the present war from its predecessors. That a peace should last for nearly forty years, and should then be interrupted, not, as heretofore, by hostilities between civilized states, but by the ambition of the only empire which is at once powerful and uncivilized – is one of many proofs that a dislike to war is a cultivated taste peculiar to an

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Hoskins's Travels in Ethiopia, p. 163; *Origines du Droit*, in *Œuvres de Michelet*, vol. ii. pp. 333, 334 note. So also the Thracians: γῆς δὲ ἐργάτην καὶ ληιστύος, κάλλιστον. *Herodotus*, book v. chap. 6, vol. iii. p. 10, edit. Baehr.

[339] Malcolm (*History of Persia*, vol. i. p. 204) says of the Tartars, 'There is only one path to eminence, that of military renown.' Thus, too, in the *Institutes of Timour*, p. 269: 'He only is equal to stations of power and dignity, who is well acquainted with the military art, and with the various modes of breaking and defeating hostile armies.' The same turn of mind is shown in the frequency and evident delight with which Homer relates battles – a peculiarity noticed in *Mure's Greek Literature*, vol. ii. pp. 63, 64, where an attempt is made to turn it into an argument to prove that the Homeric poems are all by the same author; though the more legitimate inference would be that the poems were all composed in a barbarous age.

[340] To the prospect of personal distinction there was formerly added that of wealth; and in Europe, during the Middle Ages, war was a very lucrative profession, owing to the custom of exacting heavy ransom for the liberty of prisoners. See Barrington's learned work, *Observations on the Statutes*, pp. 390–393. In the reign of Richard II. 'a war with France was esteemed as almost the only method by which an English gentleman could become rich.' Compare *Turner's Hist. of England*, vol. vi. p. 21. Sainte Palaye (*Mémoires sur l'ancienne Chevalerie*, vol. i. p. 311) says, 'La guerre enrichissoit alors par le butin, et par les rançons, celui qui la faisoit avec le plus de valeur, de vigilance et d'activité. La rançon étoit, ce semble, pour l'ordinaire, une année des revenus du prisonnier.' For an analogy with this, see *Rig Veda Sanhita*, vol. i. p. 208, sec. 3, and vol. ii. p. 265, sec. 13. In Europe, the custom of paying a ransom for prisoners-of-war survived the Middle Ages, and was only put an end to by the peace of Munster, in 1648. *Manning's Commentaries on the Law of Nations*, 1839, p. 162; and on the profits formerly made, pp. 157, 158.

[341] I wrote this in 1855.

intellectual people. For no one will pretend that the military predilections of Russia are caused by a low state of morals, or by a disregard of religious duties. So far from this, all the evidence we have shows that vicious habits are not more common in Russia than in France or England;[342] and it is certain that the Russians submit to the teachings of the church with a docility greater than that displayed by their civilized opponents.[343] It is, therefore, clear that Russia is a warlike country, not because the inhabitants are immoral, but because they are unintellectual. The fault is in the head, not in the heart. In Russia, the national intellect being little cultivated, the intellectual classes lack influence; the military class, therefore, is supreme. In this early stage of society, there is as yet no middle rank,[344] and consequently the thoughtful and pacific habits which spring from the middle ranks have no existence. The minds of men, deprived of mental pursuits,[345] naturally turn to warlike ones, as the only resource remaining to them. Hence it is that, in Russia, all ability is estimated by a military standard. The army is considered to be the greatest glory of the country: to win a battle, or outwit an enemy, is valued as one of the noblest achievements of life; and civilians, whatever their merits may be, are despised by this barbarous people, as beings of an altogether inferior and subordinate character.[346]

In England, on the other hand, opposite causes have produced opposite results. With us intellectual progress is so rapid, and the authority of the middle class so great, that not only have military men no influence in the government of the state, but there seemed at one time even a danger lest we should push this feeling to an extreme; and lest, from our detestation of war, we should neglect those defensive precautions which the enmity of other nations makes it advisable to adopt. But this at least we may safely say, that, in our country, a love of war is, as a national taste, utterly extinct. And this vast result has been effected, not by moral teachings, nor by the dictates of moral instinct; but by the simple fact, that in the progress of civilization there have been formed certain classes of society which have an interest in the preservation of peace, and whose united authority is sufficient to control those other classes whose interest lies in the prosecution of war.

It would be easy to conduct this argument further, and to prove how, by an increasing love of intellectual pursuits, the military service necessarily declines, not only in reputation, but likewise in

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[342] Indeed some have supposed that there is less immorality in Russia than in Western Europe; but this idea is probably erroneous. See *Stirling's Russia*, Lond. 1841, pp. 59, 60. The benevolence and charitable disposition of the Russians are attested by Pinkerton, who had good means of information, and was by no means prejudiced in their favour. See *Pinkerton's Russia*, Lond. 1833, pp. 335, 336. Sir John Sinclair also says they are 'prone to acts of kindness and charity.' *Sinclair's Correspondence*, vol. ii. p. 241.

[343] The reverence of the Russian people for their clergy has attracted the attention of many observers, and is, indeed, too notorious to require proof.

[344] A very observing and intelligent writer says, 'Russia has only two ranks – the highest and the lowest.' *Letters from the Baltic*, Lond. 1841, vol. ii. p. 185. 'Les marchands, qui formeraient une classe moyenne, sont en si petit nombre qu'ils ne peuvent marquer dans l'état: d'ailleurs presque tous sont étrangers; … où donc trouver cette classe moyenne qui fait la force des états?' *Custine's Russie*, vol. ii. pp. 125, 126: see also vol. iv. p. 74.

[345] A recent authoress, who had admirable opportunities of studying the society of St. Petersburg, which she estimated with that fine tact peculiar to an accomplished woman, was amazed at this state of things among classes surrounded with every form of luxury and wealth: 'a total absence of all rational tastes or literary topics… Here it is absolutely *mauvais genre* to discuss a rational subject – mere *pédanterie* to be caught upon any topics beyond dressing, dancing, and a *jolie tournure*.' *Letters from the Baltic*, 1841, vol. ii. p. 233. M. Custine (*La Russie en 1839*, vol. i. p. 321) says 'Règle générale, personne ne profère jamais un mot qui pourrait intéresser vivement quelqu'un.' At vol. ii. p. 195, 'De toutes les facultés de l'intelligence, la seule qu'on estime ici c'est le tact.' Another writer of repute, M. Kohl, contemptuously observes, that in Russia, 'the depths of science are not even guessed at.' *Kohl's Russia*, 1842, Lond. p. 142.

[346] According to Schnitzler, 'Precedence is determined, in Russia, by military rank; and an ensign would take the *pas* of a nobleman not enrolled in the army, or occupying some situation giving military rank.' *M'Culloch's Geog. Dict.* 1849, vol. ii. p. 614. The same thing is stated in *Pinkerton's Russia*, 1833, p. 321. M. Erman, who travelled through great part of the Russian empire, says, 'In the modern language of St. Petersburg, one constantly hears a distinction of the greatest importance, conveyed in the inquiry which is habitually made respecting individuals of the educated class: Is he a plain-coat or a uniform?' *Erman's Siberia*, vol. i. p. 45. See also on this preponderance of the military classes, which is the inevitable fruit of the national ignorance, *Kohl's Russia*, pp. 28, 194; *Stirling's Russia under Nicholas the First*, p. 7; *Custine's Russie*, vol. i. pp. 147, 152, 252, 266, vol. ii. pp. 71, 128, 309, vol. iii. p. 328, vol. iv. p. 284. Sir A. Alison (*History of Europe*, vol. ii. pp. 391, 392) says, 'The whole energies of the nation are turned towards the army. Commerce, the law, and all civil employments, are held in no esteem; the whole youth of any consideration betake themselves to the profession of arms.' The same writer (vol. x. p. 566) quotes the remark of Bremner, that 'nothing astonishes the Russian or Polish noblemen so much as seeing the estimation in which the civil professions, and especially the bar, are held in Great Britain.'

ability. In a backward state of society men of distinguished talents crowd to the army, and are proud to enrol themselves in its ranks. But, as society advances, new sources of activity are opened, and new professions arise, which, being essentially mental, offer to genius opportunities for success more rapid than any formerly known. The consequence is, that in England, where these opportunities are more numerous than elsewhere, it nearly always happens that if a father has a son whose faculties are remarkable, he brings him up to one of the lay professions, where intellect, when accompanied by industry, is sure to be rewarded. If, however, the inferiority of the boy is obvious, a suitable remedy is at hand: he is made either a soldier or a clergyman; he is sent into the army, or hidden in the church. And this, as we shall hereafter see, is one of the reasons why, as society advances, the ecclesiastical spirit and the military spirit never fail to decline. As soon as eminent men grow unwilling to enter any profession, the lustre of that profession will be tarnished: first its reputation will be lessened, and then its power will be abridged. This is the process through which Europe is actually passing, in regard both to the church and to the army. The evidence, so far as the ecclesiastical profession is concerned, will be found in another part of this work. The evidence respecting the military profession is equally decisive. For although that profession has in modern Europe produced a few men of undoubted genius, their number is so extremely small, as to amaze us at the dearth of original ability. That the military class, taken as a whole, has a tendency to degenerate, will become still more obvious if we compare long periods of time. In the ancient world, the leading warriors were not only possessed of considerable accomplishments, but were comprehensive thinkers in politics as well as in war, and were in every respect the first characters of their age. Thus – to give only a few specimens from a single people – we find that the three most successful statesmen Greece ever produced were Solon, Themistocles, and Epaminondas, – all of whom were distinguished military commanders. Socrates, supposed by some to be the wisest of the ancients, was a soldier; and so was Plato; and so was Antisthenes, the celebrated founder of the Cynics. Archytas, who gave a new direction to the Pythagorean philosophy; and Melissus, who developed the Eleatic philosophy – were both of them well-known generals, famous alike in literature and in war. Among the most eminent orators, Pericles, Alcibiades, Andocides, Demosthenes, and Æschines were all members of the military profession; as also were the two greatest tragic writers, Æschylus and Sophocles. Archilochus, who is said to have invented iambic verses, and whom Horace took as a model, was a soldier; and the same profession could likewise boast of Tyrtæus, one of the founders of elegiac poetry, and of Alcæus, one of the best composers of lyric poetry. The most philosophic of all the Greek historians was certainly Thucydides; but he, as well as Xenophon and Polybius, held high military appointments, and on more than one occasion succeeded in changing the fortunes of war. In the midst of the hurry and turmoil of camps, these eminent men cultivated their minds to the highest point that the knowledge of that age would allow: and so wide is the range of their thoughts, and such the beauty and dignity of their style, that their works are read by thousands who care nothing about the sieges and battles in which they were engaged.

These were among the ornaments of the military profession in the ancient world; and all of them wrote in the same language, and were read by the same people. But in the modern world this identical profession, including many millions of men, and covering the whole of Europe, has never been able, since the sixteenth century, to produce ten authors who have reached the first class either as writers or as thinkers. Descartes is an instance of an European soldier combining the two qualities; he being as remarkable for the exquisite beauty of his style as for the depth and originality of his inquiries. This, however, is a solitary case; and there is, I believe, no second one of a modern military writer thus excelling in both departments. Certainly, the English army, during the last two hundred and fifty years, affords no example of it, and has, in fact, only possessed two authors, Raleigh and Napier, whose works are recognized as models, and are studied merely for their intrinsic merit. Still, this is simply in reference to style; and these two historians, notwithstanding their skill in composition, have never been reputed profound thinkers on difficult subjects, nor have they added anything of moment

to the stock of our knowledge. In the same way, among the ancients, the most eminent soldiers were likewise the most eminent politicians, and the best leaders of the army were generally the best governors of the state. But here, again, the progress of society has wrought so great a change, that for a long period instances of this have been excessively rare. Even Gustavus Adolphus and Frederick the Great failed ignominiously in their domestic policy, and showed themselves as short-sighted in the arts of peace as they were sagacious in the arts of war. Cromwell, Washington, and Napoleon are, perhaps, the only first-rate modern warriors of whom it can be fairly said, that they were equally competent to govern a kingdom and command an army. And, if we look at England as furnishing a familiar illustration, we see this remark exemplified in our two greatest generals, Marlborough and Wellington. Marlborough was a man not only of the most idle and frivolous pursuits, but was so miserably ignorant, that his deficiencies made him the ridicule of his contemporaries; and of politics he had no other idea but to gain the favour of the sovereign by flattering his mistress, to desert the brother of that sovereign at his utmost need, and afterwards, by a double treachery, turn against his next benefactor, and engage in a criminal, as well as a foolish, correspondence with the very man whom a few years before he had infamously abandoned. These were the characteristics of the greatest conqueror of his age, the hero of a hundred fights, the victor of Blenheim and of Ramilies. As to our other great warrior, it is indeed true that the name of Wellington should never be pronounced by an Englishman without gratitude and respect: these feelings are, however, due solely to his vast military services, the importance of which it would ill become us to forget. But whoever has studied the civil history of England during the present century knows full well that this military chief, who in the field shone without a rival, and who, to his still greater glory be it said, possessed an integrity of purpose, an unflinching honesty, and a high moral feeling, which could not be surpassed, was nevertheless utterly unequal to the complicated exigencies of political life. It is notorious, that in his views of the most important legislative measures he was always in the wrong. It is notorious, and the evidence of it stands recorded in our Parliamentary Debates, that every great measure which was carried, every great improvement, every great step in reform, every concession to the popular wishes, was strenuously opposed by the Duke of Wellington, became law in spite of his opposition, and after his mournful declarations that by such means the security of England would be seriously imperilled. Yet there is now hardly a forward schoolboy who does not know that to these very measures the present stability of our country is mainly owing. Experience, the great test of wisdom, has amply proved, that those vast schemes of reform, which the Duke of Wellington spent his political life in opposing, were, I will not say expedient or advisable, but were indispensably necessary. That policy of resisting the popular will which he constantly advised is precisely the policy which has been pursued, since the Congress of Vienna, in every monarchy except our own. The result of that policy is written for our instruction: it is written in that great explosion of popular passion, which in the moment of its wrath upset the proudest thrones, destroyed princely families, ruined noble houses, desolated beautiful cities. And if the counsel of our great general had been followed, if the just demands of the people had been refused – this same lesson would have been written in the annals of our own land; and we should most assuredly have been unable to escape the consequence of that terrible catastrophe, in which the ignorance and selfishness of rulers did, only a few years ago, involve a large part of the civilized world.

Thus striking is the contrast between the military genius of ancient times, and the military genius of modern Europe. The causes of this decay are clearly traceable to the circumstance that, owing to the immense increase of intellectual employments, few men of ability will now enter a profession into which, in antiquity, men of ability eagerly crowded, as supplying the best means of exercising those faculties which, in more civilized countries, are turned to a better account. This, indeed, is a very important change; and thus to transfer the most powerful intellects from the arts of war to the arts of peace, has been the slow work of many centuries, the gradual, but constant, encroachments of advancing knowledge. To write the history of those encroachments would be to write the history of the human intellect – a task impossible for any single man adequately to perform.

But the subject is one of such interest, and has been so little studied, that though I have already carried this analysis farther than I had intended, I cannot refrain from noticing what appear to me to be the three leading ways in which the warlike spirit of the ancient world has been weakened by the progress of European knowledge.

The first of these arose out of the invention of Gunpowder; which, though a warlike contrivance, has in its results been eminently serviceable to the interests of peace.[347] This important invention is said to have been made in the thirteenth century;[348] but was not in common use until the fourteenth, or even the beginning of the fifteenth, century. Scarcely had it come into operation, when it worked a great change in the whole scheme and practice of war. Before this time, it was considered the duty of nearly every citizen to be prepared to enter the military service, for the purpose either of defending his own country, or of attacking others.[349] Standing armies were entirely unknown; and in their place there existed a rude and barbarous militia, always ready for battle, and always unwilling to engage in those peaceful pursuits which were then universally despised. Nearly every man being a soldier, the military profession, as such, had no separate existence; or, to speak more properly, the whole of Europe composed one great army, in which all other professions were merged. To this the only exception was the ecclesiastical profession; but even that was affected by the general tendency, and it was not at all uncommon to see large bodies of troops led to the field by bishops and abbots, to most of whom the arts of war were in those days perfectly familiar.[350] At all events, between these two professions men were necessarily divided: the only avocations were war and theology; and if you refused to enter the church, you were bound to serve in the army. As a natural consequence, everything of real importance was altogether neglected. There were, indeed, many priests and many warriors, many sermons and many battles.[351] But, on the other hand, there was neither trade, nor commerce, nor manufactures; there was no science, no literature: the useful arts were entirely unknown; and even the highest ranks of society were unacquainted, not only with the most ordinary comforts, but with the commonest decencies of civilized life.

But so soon as gunpowder came into use, there was laid the foundation of a great change. According to the old system, a man had only to possess, what he generally inherited from his father, either a sword or a bow, and he was ready equipped for the field.[352] According to the new system, new

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[347] The consequences of the invention of gunpowder are considered very superficially by Frederick Schlegel (*Lectures on the History of Literature*, vol. ii. pp. 37, 38), and by Dugald Stewart (*Philosophy of the Mind*, vol. i. p. 262). They are examined with much greater ability, though by no means exhaustively, in *Smith's Wealth of Nations*, book v. chap. i. pp. 292, 296, 297; *Herder's Ideen zur Geschichte der Menschheit*, vol. iv. p. 301; *Hallam's Middle Ages*, vol. ii. p. 470.

[348] From the following authorities, it appears impossible to trace it further back than the thirteenth century; and it is doubtful whether the Arabs were, as is commonly supposed, the inventors: *Humboldt's Cosmos*, vol. ii. p. 590; *Koch*, *Tableaux des Révolutions*, vol. i. p. 242; *Beckmann's History of Inventions*, 1846, vol. ii. p. 505; *Histoire Lit. de la France*, vol. xx. p. 236; *Thomson's History of Chemistry*, vol. i. p. 36; *Hallam's Middle Ages*, vol. i. p. 341. The statements in *Erman's Siberia*, vol. i. pp. 370, 371, are more positive than the evidence we are possessed of will justify; but there can be no doubt that a sort of gunpowder was at an early period used in China, and in other parts of Asia.

[349] *Vattel, le Droit des Gens*, vol. ii. p. 129; *Lingard's History of England*, vol. ii. pp. 356, 357. Among the Anglo-Saxons, 'all free men and proprietors of land, except the ministers of religion, were trained to the use of arms, and always held ready to take the field at a moment's warning.' *Eccleston's English Antiquities*, p. 62. 'There was no distinction between the soldier and the citizen.' *Palgrave's Anglo-Saxon Commonwealth*, vol. i. p. 200.

[350] On these warlike ecclesiastics, compare *Grose's Military Antiq.* vol. i. pp. 67–8; *Lingard's Hist. of England*, vol. ii. pp. 26, 183, vol. iii. p. 14; *Turner's Hist. of England*, vol. iv. p. 458, vol. v. pp. 92, 402, 406; *Mosheim's Eccl. History*, vol. i. pp. 173, 193, 241; *Crichton's Scandinavia*, Edinb. 1838, vol. i. p. 220. Such opponents were the more formidable, because in those happy days it was sacrilege for a layman to lay hands on a bishop. In 1095 his Holiness the Pope caused a council to declare, 'Quòd qui apprehenderit episcopum omnino exlex fiat.' *Matthæi Paris Historia Major*, p. 18. As the context contains no limitation of this, it would follow that a man became spiritually outlawed if he, even in self-defence, took a bishop prisoner.

[351] As Sharon Turner observes of England under the Anglo-Saxon government, 'war and religion were the absorbing subjects of this period.' *Turner's History of England*, vol. iii. p. 263. And a recent scientific historian says of Europe generally: 'alle Künste und Kenntnisse, die sich nicht auf das edle Kriegs-, Rauf- und Raubhandwerk bezogen, waren überflüssig und schädlich. Nur etwas Theologie war vonnöthen, um die Erde mit dem Himmel zu verbinden.' *Winckler, Geschichte der Botanik*, 1854, p. 56.

[352] In 1181, Henry II. of England ordered that every man should have either a sword or bow; which he was not to sell, but leave

means were required, and the equipment became more costly and more difficult. First, there was the supply of gunpowder;[353] then there was the possession of muskets, which were expensive weapons, and considered difficult to manage.[354] Then, too, there were other contrivances to which gunpowder naturally gave rise, such as pistols, bombs, mortars, shells, mines, and the like.[355] All these things, by increasing the complication of the military art, increased the necessity of discipline and practice; while, at the same time, the change that was being effected in the ordinary weapons deprived the great majority of men of the possibility of procuring them. To suit these altered circumstances, a new system was organized: and it was found advisable to train up bodies of men for the sole purpose of war, and to separate them as much as possible from those other employments in which formerly all soldiers were occasionally engaged. Thus it was that there arose standing armies; the first of which were formed in the middle of the fifteenth century,[356] almost immediately after gunpowder was generally known. Thus, too, there arose the custom of employing mercenary troops; of which we find a few earlier instances, though the practice was not fully established until the latter part of the fourteenth century.[357]

The importance of this movement was soon seen, by the change it effected in the classification of European society. The regular troops being, from their discipline, more serviceable against the enemy, and also more immediately under the control of the government, it naturally followed that, as their merits became understood, the old militia should fall, first into disrepute, then be neglected, and then sensibly diminish. At the same time, this diminution in the number of undisciplined soldiers

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to his heir: 'cæteri autem omnes haberent wanbasiam, capellum ferreum, lanceam et gladium, vel arcum et sagittas: et prohibuit ne aliquis arma sua venderet vel invadiaret; sed cùm moreretur, daret illa propinquiori hæredi suo.' *Rog. de Hov. Annal. in Scriptores post Bedam*, p. 348 rev. In the reign of Edward I., it was ordered that every man possessing land to the value of forty shillings should keep 'a sword, bow and arrows, and a dagger… Those who were to keep bows and arrows might have them out of the forest.' *Grose's Military Antiquities*, vol. ii. pp. 301, 302. Compare *Geijer's History of the Swedes*, part i. p. 94. Even late in the fifteenth century, there were at the Universities of Oxford and Cambridge, 'in each from four to five thousand scholars, all grown up, carrying swords and bows, and in great part gentry.' *Sir William Hamilton on the History of Universities*, in *Hamilton's Philosoph. Discussions*, p. 414. One of the latest attempts made to revive archery was a warrant issued by Elizabeth in 1596, and printed by Mr. Collier in the *Egerton Papers*, pp. 217–220, edit. Camden Soc. 1840. In the south-west of England, bows and arrows did not finally disappear from the muster-rolls till 1599; and in the meantime the musket gained ground. See *Yonge's Diary*, edit. Camden Soc. 1848, p. xvii.

[353] It is stated by many writers that no gunpowder was manufactured in England until the reign of Elizabeth. *Camden's Elizabeth*, in *Kennett's History*, vol. ii. p. 388, London, 1719; *Strickland's Queens of England*, vol. vi. p. 223, Lond. 1843; *Grose's Military Antiquities*, vol. i. p. 378. But Sharon Turner (*History of England*, vol. vi. pp. 490, 491, Lond. 1839) has shown, from an order of Richard III. in the Harleian manuscripts, that it was made in England in 1483; and Mr. Eccleston (*English Antiquities*, p. 182, Lond. 1847) states, that the English both made and exported it as early as 1411: compare p. 202. At all events, it long remained a costly article; and even in the reign of Charles I., I find a complaint of its dearness, 'whereby the train-bands are much discouraged in their exercising.' *Parliament. Hist.* vol. ii. p. 655. In 1686, it appears from the *Clarendon Correspondence*, vol. i. p. 413, that the wholesale price ranged from about 2*l.* 10*s.* to 3*l.* per barrel. On the expense of making it in the present century, see *Liebig and Kopp's Reports on Chemistry*, vol. iii. p. 325, Lond. 1852.

[354] The muskets were such miserable machines, that, in the middle of the fifteenth century, it took a quarter of an hour to charge and fire one. *Hallam's Middle Ages*, vol. i. p. 342. Grose (*Military Antiquities*, vol. i. p. 146, vol. ii. pp. 292, 337) says, that the first mention of muskets in England is in 1471; and that rests for them did not become obsolete until the reign of Charles I. In the recent edition of *Beckmann's History of Inventions*, Lond. 1846, vol. ii. p. 535, it is strangely supposed that muskets were 'first used at the battle of Pavia.' Compare *Daniel*, *Histoire de la Milice*, vol. i. p. 464, with *Smythe's Military Discourses*, in *Ellis's Original Letters*, p. 53, edit. Camden Society.

[355] Pistols are said to have been invented early in the sixteenth century. *Grose's Military Antiq.* vol. i. pp. 102, 146. Gunpowder was first employed in mining towns in 1487. *Prescott's Hist. of Ferdinand and Isabella*, vol. ii. p. 32; *Koch*, *Tableaux des Révolutions*, vol. i. p. 243; *Daniel*, *Histoire de la Milice Française*, vol. i. p. 574. Daniel (*Milice Française*, vol. i. pp. 580, 581) says that bombs were not invented till 1588; and the same thing is asserted in *Biographie Universelle*, vol. xv. p. 248: but, according to Grose (*Military Antiq.* vol. i. p. 387), they are mentioned by Valturinus in 1472. On the general condition of the French artillery in the sixteenth century, see *Relations des Ambassadeurs Vénitiens*, vol. i. pp. 94, 476, 478, Paris, 1838, 4to: a curious and valuable publication. There is some doubt as to the exact period in which cannons were first known; but they were certainly used in war before the middle of the fourteenth century. See *Bohlen*, *das alte Indien*, vol. ii. p. 63; *Daniel*, *Histoire de la Milice*, vol. i. pp. 441, 442.

[356] *Blackstone's Commentaries*, vol. i. p. 413; *Daniel, Hist. de la Milice*, vol. i. p. 210, vol. ii. pp. 491, 493; *Œuvres de Turgot*, vol. viii. p. 228.

[357] The leading facts respecting the employment of mercenary troops are indicated with great judgment by Mr. Hallam, in his *Middle Ages*, vol. i. p. 328–337.

deprived the country of a part of its warlike resources, and therefore made it necessary to pay more attention to the disciplined ones, and to confine them more exclusively to their military duties. Thus it was that a division was first broadly established between the soldier and the civilian; and there arose a separate military profession,[358] which, consisting of a comparatively small number of the total amount of citizens, left the remainder to settle in some other pursuit.[359] In this way immense bodies of men were gradually weaned from their old warlike habits; and being, as it were, forced into civil life, their energies became available for the general purposes of society, and for the cultivation of those arts of peace which had formerly been neglected. The result was, that the European mind, instead of being, as heretofore, solely occupied either with war or with theology, now struck out into a middle path, and created those great branches of knowledge to which modern civilization owes its origin. In each successive generation this tendency towards a separate organization was more marked; the utility of a division of labour became clearly recognized; and by this means knowledge itself advanced, the authority of this middle or intellectual class correspondingly increased. Each addition to its power lessened the weight of the other two classes, and checked those superstitious feelings and that love of war, on which, in an early state of society, all enthusiasm is concentrated. The evidence of the growth and diffusion of this intellectual principle is so full and decisive, that it would be possible, by combining all the branches of knowledge, to trace nearly the whole of its consecutive steps. At present, it is enough to say, that, taking a general view, this third, or intellectual, class, first displayed an independent, though still a vague, activity in the fourteenth and fifteenth centuries; that in the sixteenth century, this activity, assuming a distinct form, showed itself in religious outbreaks; that in the seventeenth century, its energy, becoming more practical, was turned against the abuses of government, and caused a series of rebellions, from which hardly any part of Europe escaped; and finally, that in the eighteenth and nineteenth centuries, it has extended its aim to every department of public and private life, diffusing education, teaching legislators, controlling kings, and, above all, settling on a sure foundation that supremacy of Public Opinion, to which not only constitutional princes, but even the most despotic sovereigns, are now rendered strictly amenable.

These, indeed, are vast questions; and, without some knowledge of them, no one can understand the present condition of European society, or form the least idea of its future prospects. It is, however, sufficient that the reader can now perceive the way in which so slight a matter as the invention of gunpowder diminished the warlike spirit, by diminishing the number of persons to whom the practice of war was habitual. There were, no doubt, other and collateral circumstances which tended in the same direction; but the use of gunpowder was the most effectual, because, by increasing the difficulty and expense of war, it made a separate military profession indispensable; and thus, curtailing the action of the military spirit, left an overplus, an unemployed energy, which soon found its way to the pursuits of peace, infused into them a new life, and began to control that lust of conquest, which, though natural to a barbarous people, is the great enemy of knowledge, and is the most fatal of those diseased appetites by which even civilized countries are too often afflicted.

The second intellectual movement, by which the love of war has been lessened, is much more recent, and has not yet produced the whole of its natural effects. I allude to the discoveries made by Political Economy: a branch of knowledge with which even the wisest of the ancients had not the least

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[358] Grose (*Military Antiquities*, vol. i. pp. 310, 311) says, that until the sixteenth century, English soldiers had no professional dress, but 'were distinguished by badges of their leaders' arms, similar to those now worn by watermen.' It was also early in the sixteenth century that there first arose a separate military literature. *Daniel*, *Hist. de la Milice*, vol. i. p. 380: 'Les auteurs, qui ont écrit en détail sur la discipline militaire: or ce n'est guères que sous François I, et sous l'Empereur Charles V, que les Italiens, les François, les Espagnols et les Allemans ont commencé à écrire sur ce sujet.'

[359] The change from the time when every layman was a soldier, is very remarkable. Adam Smith (*Wealth of Nations*, book v. chap. i. p. 291) says, 'Among the civilized nations of modern Europe, it is commonly computed, that not more than the one-hundredth part of the inhabitants of any country can be employed as soldiers, without ruin to the country which pays the expense of their service.' The same proportion is given in *Sadler's Law of Population*, vol. i. p. 292; and in *Grandeur et Décadence des Romains*, chap. iii. —*Œuvres de Montesquieu*, p. 130: also in *Sharpe's History of Egypt*, vol. i. p. 105; and in *Alison's History of Europe*, vol. xii. p. 318.

acquaintance, but which possesses an importance it would be difficult to exaggerate, and is, moreover, remarkable, as being the only subject immediately connected with the art of government that has yet been raised to a science. The practical value of this noble study, though perhaps only fully known to the more advanced thinkers, is gradually becoming recognized by men of ordinary education: but even those by whom it is understood seem to have paid little attention to the way in which, by its influence, the interests of peace, and therefore of civilization, have been directly promoted.[360] The manner in which this has been brought about, I will endeavour to explain, as it will furnish another argument in support of that great principle which I wish to establish.

It is well known, that, among the different causes of war, commercial jealousy was formerly one of the most conspicuous; and there are numerous instances of quarrels respecting the promulgation of some particular tariff, or the protection of some favourite manufacture. Disputes of this kind were founded upon the very ignorant, but the very natural notion, that the advantages of commerce depend upon the balance of trade, and that whatever is gained by one country must be lost by another. It was believed that wealth is composed entirely of money; and that it is, therefore, the essential interest of every people to import few commodities and much gold. Whenever this was done, affairs were said to be in a sound and healthy state; but, if this was not done, it was declared that we were being drained of our resources, and that some other country was getting the better of us, and was enriching itself at our expense.[361] For this the only remedy was to negotiate a commercial treaty, which should oblige the offending nation to take more of our commodities, and give us more of their gold: if, however, they refused to sign the treaty, it became necessary to bring them to reason; and for this purpose an armament was fitted out to attack a people who, by lessening our wealth, had deprived us of that money by which alone trade could be extended in foreign markets.[362]

This misconception of the true nature of barter was formerly universal;[363] and being adopted even by the ablest politicians, was not only an immediate cause of war, but increased those feelings

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[360] The pacific tendencies of political economy are touched on very briefly in *Blanqui*, *Histoire de l'Economie Politique*, vol. ii. p. 207; and in *Twiss's Progress of Political Economy*, p. 240.

[361] This favourite doctrine is illustrated in a curious 'Discourse,' written in 1578, and printed in *Stow's London*, in which it is laid down, that if our exports exceed our imports, we gain by the trade; but that, if they are less, we lose. *Stow's London*, edit. Thoms, 1842, p. 205. Whenever this balance was disturbed, politicians were thrown into an agony of fear. In 1620, James I. said, in one of his long speeches, 'It's strange that my Mint hath not gone this eight or nine years; but I think the fault of the want of money is the uneven balancing of trade.' *Parl. History*, vol. i. p. 1179; see also the debate 'On the Scarcity of Money,' pp. 1194–1196. In 1620, the House of Commons, in a state of great alarm, passed a resolution, 'That the importation of tobacco out of Spain is one reason of the scarcity of money in this kingdom.' *Parl. Hist.* vol. i. p. 1198. In 1627, it was actually argued in the House of Commons that the Netherlands were being weakened by their trade with the East Indies, because it carried money out of the country! *Parl. Hist.* vol. ii. p. 220. Half a century later, the same principle was advocated by Sir William Temple in his Letters, and also in his Observations upon the United Provinces. *Temple's Works*, vol. i. p. 175, vol. ii. pp. 117, 118.

[362] In 1672, the celebrated Earl of Shaftesbury, then Lord Chancellor, announced that the time had come when the English must go to war with the Dutch; for that it was 'impossible both should stand upon a balance; and that, if we do not master their trade, they will ours. They or we must truckle. One must and will give the law to the other. There is no compounding, where the contest is for the trade of the whole world.' *Somers' Tracts*, vol. viii. p. 39. A few months later, still insisting on the propriety of the war, he gave as one of his reasons that it 'was necessary to the trade of England that there should be a fair adjustment of commerce in the East Indies.' *Parl. Hist.* vol. iv. p. 587. In 1701, Stepney, a diplomatist and one of the lords of trade, published an essay, strongly insisting on the benefits which would accrue to English commerce by a war with France. *Somers' Tracts*, vol. xi. pp. 199, 217; and he says, p. 205, that one of the consequences of peace with France would be 'the utter ruin and destruction of our trade.' See also, in vol. xiii. p. 688, the remarks on the policy of William III. In 1743, Lord Hardwicke, one of the most eminent men of his time, said, in the House of Lords, 'If our wealth is diminished, it is time to ruin the commerce of that nation which has driven us from the markets of the Continent – by sweeping the seas of their ships, and by blockading their ports.' *Campbell's Lives of the Chancellors*, vol. v. p. 89.

[363] In regard to the seventeenth century, see *Mill's History of India*, vol. i. pp. 41, 42. To this I may add, that even Locke had very confused notions respecting the use of money in trade. See *Essay on Money*, in *Locke's Works*, vol. iv.; and in particular pp. 9, 10, 12, 20, 21, 49–52. Berkeley, profound thinker as he was, fell into the same errors, and assumes the necessity of maintaining the balance of trade, and lessening our imports in proportion as we lessen our exports. See the *Querist*, Nos. xcix. clxi., in *Berkeley's Works*, vol. ii. pp. 246, 250: see also his proposal for a sumptuary law, in *Essay towards Preventing the Ruin of Great Britain*, in *Works*, vol. ii. p. 190. The economical views of Montesquieu (*Esprit des Lois*, livre xx. chap. xii. in *Œuvres*, p. 353) are as hopelessly wrong; while Vattel (*Droit des Gens*, vol. i. pp. 111, 117, 118, 206) goes out of his way to praise the mischievous interference of the English government, which he recommends as a pattern to other states.

of natural hatred by which war is encouraged; each country thinking that it had a direct interest in diminishing the wealth of its neighbours.[364] In the seventeenth, or even late in the sixteenth century, there were, indeed, one or two eminent thinkers who exposed some of the fallacies upon which this opinion was based.[365] But their arguments found no favour with those politicians by whom European affairs were then administered. It is doubtful if they were known; and it is certain that, if known, they were despised by statesmen and legislators, who, from the constancy of their practical occupations, cannot be supposed to have sufficient leisure to master each new discovery that is successively made; and who in consequence are, as a body, always in the rear of their age. The result was, that they went blundering on in the old track, believing that no commerce could flourish without their interference, troubling that commerce by repeated and harassing regulations, and taking for granted that it was the duty of every government to benefit the trade of their own people by injuring the trade of others.[366]

But in the eighteenth century, a long course of events, which I shall hereafter trace, prepared the way for a spirit of improvement, and a desire for reform, of which the world had then seen no example. This great movement displayed its energy in every department of knowledge; and now it was that a successful attempt was first made to raise Political Economy to a science, by discovering the laws which regulate the creation and diffusion of wealth. In the year 1776, Adam Smith published his *Wealth of Nations*; which, looking at its ultimate results, is probably the most important book that has ever been written, and is certainly the most valuable contribution ever made by a single man towards establishing the principles on which government should be based. In this great work, the old theory of protection as applied to commerce was destroyed in nearly all its parts;[367] the doctrine of the balance of trade was not only attacked, but its falsehood was demonstrated; and innumerable absurdities, which had been accumulating for ages, were suddenly swept away.[368]

If the *Wealth of Nations* had appeared in any preceding century, it would have shared the fate of the great works of Stafford and Serra; and although the principles which it advocated would, no doubt, have excited the attention of speculative thinkers, they would, in all probability, have produced no effect on practical politicians, or, at all events, would only have exercised an indirect and precarious influence. But the diffusion of knowledge had now become so general, that even our ordinary legislators were, in some degree, prepared for these great truths, which, in a former period,

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[364] The Earl of Bristol, a man of some ability, told the House of Lords, in 1642, that it was a great advantage to England for other countries to go to war with each other; because by that means we should get their money, or, as he called it, their 'wealth.' See his speech, in *Parl. History*, vol. ii. pp. 1274–1279.

[365] Serra, who wrote in 1613, is said to have been the first to prove the absurdity of discouraging the exportation of the precious metals. See *Twiss on the Progress of Political Economy*, pp. 8, 12, 13. But I believe that the earliest approach towards modern economical discoveries is a striking essay published in 1581, and ascribed to William Stafford. It will be found in the *Harleian Miscellany*, vol. ix. pp. 139–192, edit. Park, 1812; and the title, *Brief Conceipt of English Policy*, gives an inadequate idea of what is, on the whole, the most important work on the theory of politics which had then appeared: since the author not only displays an insight into the nature of price and value, such as no previous thinker possessed, but he points out clearly the causes of that system of enclosures which is the leading economical fact in the reign of Elizabeth, and is intimately connected with the rise of the poor-laws. Some account of this essay is given by Dr. Twiss; but the original is easily accessible, and should be read by every student of English history. Among other heretical propositions, it recommends free trade in corn.

[366] In regard to the interference of the English legislature, it is stated by Mr. M'Culloch (*Polit. Econ.* p. 269), on the authority of a committee of the House of Commons, that before the year 1820, 'no fewer than two thousand laws with respect to commerce had been passed at different periods.' It may be confidently asserted, that every one of those laws was an unmitigated evil, since no trade, and indeed no interest of any kind, can be protected by government without inflicting immeasurably greater loss upon the unprotected interests and trades; while, if the protection is universal, the loss will be universal. Some striking instances of the absurd laws which have been passed respecting trade, are collected in *Barrington's Observations on the Statutes*, pp. 279–285. Indeed, it was considered necessary that every parliament should do something in this way; and Charles II., in one of his speeches, says, 'I pray, contrive any good short bills which may improve the industry of the nation … and so God bles your councils.' *Parl. History*, vol. iv. p. 291. Compare the remarks on the fishery-trade, in *Somers' Tracts*, vol. xii. p. 33.

[367] To this the only exception of any moment is the view taken of the usury-laws, which Jeremy Bentham has the honour of demolishing.

[368] Before Adam Smith, the principal merit is due to Hume; but the works of that profound thinker were too fragmentary to produce much effect. Indeed, Hume, notwithstanding his vast powers, was inferior to Smith in comprehensiveness as well as in industry.

they would have despised as idle novelties. The result was, that the doctrines of Adam Smith soon found their way into the House of Commons;[369] and, being adopted by a few of the leading members, were listened to with astonishment by that great assembly, whose opinions were mainly regulated by the wisdom of their ancestors, and who were loth to believe that anything could be discovered by the moderns which was not already known to the ancients. But it is in vain that such men as these always set themselves up to resist the pressure of advancing knowledge. No great truth which has once been found has ever afterwards been lost; nor has any important discovery yet been made which has not eventually carried everything before it. Even so, the principles of Free Trade, as demonstrated by Adam Smith, and all the consequences which flow from them, were vainly struggled against by the most overwhelming majorities of both Houses of Parliament. Year by year the great truth made its way; always advancing, never receding.[370] The majority was at first deserted by a few men of ability, then by ordinary men, then it became a minority, then even the minority began to dwindle; and at the present day, eighty years after the publication of Smith's *Wealth of Nations*, there is not to be found any one of tolerable education who is not ashamed of holding opinions which, before the time of Adam Smith, were universally received.

Such is the way in which great thinkers control the affairs of men, and by their discoveries regulate the march of nations. And truly the history of this one triumph alone should be enough to repress the presumption of statesmen and legislators, who so exaggerate the importance of their craft as to ascribe great results to their own shifting and temporary contrivances. For, whence did they derive that knowledge, of which they are always ready to assume the merit? How did they obtain their opinions? How did they get at their principles? These are the elements of their success; and these they can only learn from their masters – from those great teachers, who, moved by the inspiration of genius, fertilize the world with their discoveries. Well may it be said of Adam Smith, and said, too, without fear of contradiction, that this solitary Scotchman has, by the publication of one single work, contributed more towards the happiness of man, than has been effected by the united abilities of all the statesmen and legislators of whom history has preserved an authentic account.

The result of these great discoveries I am not here concerned to examine, except so far as they aided in diminishing the energy of the warlike spirit. And the way in which they effected this may be easily stated. As long as it was generally believed that the wealth of a country consists of its gold, it was of course also believed that the sole object of trade is to increase the influx of the precious metals; it, therefore, became natural that Government should be expected to take measures by which such influx could be secured. This, however, could only be done by draining other countries of their gold; a result which they, for precisely the same reasons, strenuously resisted. The consequence was, that any idea of real reciprocity was impossible: every commercial treaty was an attempt made by one nation to outwit another;[371] every new tariff was a declaration of hostility; and that which ought to be

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[369] The first notice I have observed of the *Wealth of Nations* in Parliament is in 1783; and between then and the end of the century it is referred to several times, and latterly with increasing frequency. See *Parliamentary History*, vol. xxiii. p. 1152, vol. xxvi. pp. 481, 1035, vol. xxvii. p. 385, vol. xxix. pp. 834, 905, 982, 1065, vol. xxx. pp. 330, 333, vol. xxxii. p. 2, vol. xxxiii. pp. 353, 386, 522, 548, 549, 563, 774, 777, 778, 822, 823, 824, 825, 827, 1249, vol. xxxiv. pp. 11, 97, 98, 141, 142, 304, 473, 850, 901, 902, 903. It is possible that one or two passages may have been overlooked; but I believe that these are the only instances of Adam Smith being referred to during seventeen years. From a passage in *Pellew's Life of Sidmouth*, vol. i. p. 51, it appears that even Addington was studying Adam Smith in 1787.

[370] In 1797, Pulteney, in one of his financial speeches, appealed to 'the authority of Dr. Smith, who, it was well said, would persuade the present generation and govern the next.' *Parl. Hist.* vol. xxxiii. p. 778. In 1813, Dugald Stewart (*Philosophy of the Human Mind*, vol. ii. p. 472) announced that the doctrine of free trade 'has now, I believe, become the prevailing creed of thinking men all over Europe.' And in 1816, Ricardo said, 'The reasoning by which the liberty of trade is supported is so powerful, that it is daily obtaining converts. It is with pleasure that I see the progress which this great principle is making amongst those whom we should have expected to cling the longest to old prejudices.' *Proposals for an Economical Currency*, in *Ricardo's Works*, p. 407.

[371] Sir Theodore Janson, in his *General Maxims of Trade*, published in 1713, lays it down as a principle universally recognized, that 'All the nations of Europe seem to strive who shall outwit one another in point of trade; and they concur in this maxim, that the less they consume of foreign commodities, the better it is for them.' *Somers' Tracts*, vol. xiii. p. 292. Thus, too, in a *Dialogue between an Englishman and a Dutchman*, published in 1700, the Dutchman is represented as boasting that his government had 'forced treaties

the most peaceable of all pursuits became one of the causes of those national jealousies and national animosities, by which war is mainly promoted.[372] But when it was once clearly understood that gold and silver are not wealth, but are merely the representatives of wealth; when men began to see that wealth itself solely consists of the value which skill and labour can add to the raw material, and that money is of no possible use to a nation except to measure and circulate their riches; when these great truths were recognized,[373] all the old notions respecting the balance of trade, and the supreme importance of the precious metals, at once fell to the ground. These enormous errors being dispersed, the true theory of barter was easily worked out. It was perceived, that if commerce is allowed to be free, its advantages will be shared by every country which engages in it; that, in the absence of monopoly, the benefits of trade are of necessity reciprocal; and that, so far from depending on the amount of gold received, they simply arise from the facility with which a nation gets rid of those commodities which it can produce most cheaply, and receives in return those commodities which it could only produce at a great expense, but which the other nation can, from the skill of its workmen, or from the bounty of nature, afford to supply at a lower rate. From this it followed, that, in a mercantile point of view, it would be as absurd to attempt to impoverish a people with whom we trade, as it would be in a tradesman to wish for the insolvency of a rich and frequent customer. The result is, that the commercial spirit, which formerly was often warlike, is now invariably pacific.[374] And although it is perfectly true that not one merchant out of a hundred is familiar with the arguments on which these economical discoveries are founded, that does not prevent the effect which the discoveries themselves produce on his own mind. The mercantile class is, like every other, acted upon by causes which only a few members of that class are able to perceive. Thus, for instance, of all the innumerable opponents of protection, there are very few indeed who can give valid reasons to justify their opposition. But this does not prevent the opposition from taking place. For an immense majority of men always follow with implicit submission the spirit of their own time; and the spirit of the time is merely its knowledge, and the direction that knowledge takes. As, in the ordinary avocations of daily life, everyone is benefited, in the increase of his comforts, and of his general security, by the progress of many arts and sciences, of which perhaps he does not even know the name, just so is the mercantile class benefited by those great economical discoveries which, in the course of two generations, have already effected a complete change in the commercial legislation of this country, and which are now operating slowly, but steadily, upon those other European states where, public opinion being less powerful, it is more difficult to establish great truths and extirpate old abuses. While, therefore, it is perfectly true, that among merchants, a comparatively small number are acquainted with political economy, it is not the less true that they owe a large part of their wealth to the political economists; who, by removing the obstacles with which the ignorance of successive governments had impeded trade, have now settled on a solid foundation that commercial prosperity which is by no means the least of our national glories. Most assuredly is it also true, that this same intellectual movement has

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of commerce exclusive to all other nations.' *Somers' Tracts*, vol. xi. p. 376. This is the system of 'narrow selfishness' denounced by Dr. Story, in his noble work, *Conflict of Laws*, 1841, p. 32.

[372] 'It cannot, indeed, be denied that mistaken views of commerce, like those so frequently entertained of religion, have been the cause of many wars and of much bloodshed.' *M'Culloch's Principles of Political Economy*, p. 140. See also pp. 37, 38: 'It has made each nation regard the welfare of its neighbours as incompatible with its own: hence the reciprocal desire of injuring and impoverishing each other; and hence that spirit of commercial rivalry, which has been the immediate or remote cause of the greater number of modern wars.'

[373] On the rapid diffusion during the present century of the principles worked out by the economists, compare *Laing's Sweden*, pp. 356–358, with a note to the last edition of *Malthus on Population*, 1826, vol. ii. pp. 354, 355.

[374] 'The feelings of rival tradesmen, prevailing among nations, overruled for centuries all sense of the general community of advantage which commercial countries derive from the prosperity of one another; and that commercial spirit, which is now one of the strongest obstacles to wars, was during a certain period of European history their principal cause.' *Mill's Political Economy*, 1849, vol. ii. p. 221. This great change in the feelings of the commercial classes did not begin before the present century, and has not been visible to ordinary observers until the last five-and-twenty or thirty years; but it was foretold in a remarkable passage written by Herder in 1787; see his *Ideen zur Geschichte*, vol. iii. pp. 292, 293.

lessened the chance of war, by ascertaining the principles which ought to regulate our commercial relations with foreign countries; by proving, not only the inutility, but the positive mischief, caused by interfering with them; and finally, by exploding those long-established errors, which, inducing men to believe that nations are the natural enemies of each other, encouraged those evil feelings, and fostered those national jealousies, to the strength of which the military spirit owed no small share of its former influence.

The third great cause by which the love of war has been weakened, is the way in which discoveries respecting the application of Steam to the purposes of travelling have facilitated the intercourse between different countries, and thus aided in destroying that ignorant contempt which one nation is too apt to feel for another. Thus, for instance, the miserable and impudent falsehoods which a large class of English writers formerly directed against the morals and private character of the French, and, to their shame be it said, even against the chastity of French women, tended not a little to embitter the angry feelings then existing between the two first countries of Europe; irritating the English against French vices, irritating the French against English calumnies. In the same way, there was a time when every honest Englishman firmly believed that he could beat ten Frenchmen; a class of beings whom he held in sovereign contempt, as a lean and stunted race, who drank claret instead of brandy, who lived entirely off frogs; miserable infidels, who heard mass every Sunday, who bowed down before idols, and who even worshipped the Pope. On the other hand, the French were taught to despise us, as rude unlettered barbarians, without either taste or humanity; surly, ill-conditioned men, living in an unhappy climate, where a perpetual fog, only varied by rain, prevented the sun from ever being seen; suffering from so deep and inveterate a melancholy, that physicians had called it the English spleen; and under the influence of this cruel malady constantly committing suicide, particularly in November, when we were well known to hang and shoot ourselves by thousands.[375]

Whoever has looked much into the older literature of France and England, knows that these were the opinions which the two first nations of Europe, in the ignorance and simplicity of their hearts, held respecting each other. But the progress of improvement, by bringing the two countries into close and intimate contact, has dissipated these foolish prejudices, and taught each people to admire, and, what is still more important, to respect each other. And the greater the contact, the greater the respect. For, whatever theologians may choose to assert, it is certain that mankind at large has far more virtue than vice, and that in every country good actions are more frequent than bad ones. Indeed, if this were otherwise, the preponderance of evil would long since have destroyed the human race, and not even have left a single man to lament the degeneracy of his species. An additional proof of this is the fact, that the more nations associate with each other, and the more they see and know of their fellow-creatures, the more quickly do ancient enmities disappear. This is because an enlarged experience proves that mankind is not so radically bad as we from our infancy are taught to believe. But if vices were really more frequent than virtues, the result would be, that the increasing amalgamation of society would increase our bad opinion of others; because, though we may love our own vices, we do not generally love the vices of our neighbours. So far, however, is this from being the actual consequence, that it has always been found that those whose extensive knowledge makes them best acquainted with the general course of human actions, are precisely those who take the most favourable view of them. The greatest observer and the most profound thinker is invariably the most lenient judge. It is the solitary misanthrope, brooding over his fancied wrongs, who is most prone to depreciate the good qualities of our nature, and exaggerate its bad ones. Or else it is some foolish

[375] That there are more suicides in gloomy weather than in fine weather used always to be taken for granted, and was a favourite topic with the French wits, who were never weary of expatiating on our love of self-murder, and on the relation between it and our murky climate. Unfortunately for such speculations, the fact is exactly opposite to what is generally supposed, and we have decisive evidence that there are more suicides in summer than in winter. See *Quetelet sur l'Homme*, vol. ii. pp. 152, 158; *Tissot de la Manie du Suicide*, Paris, 1840, pp. 50, 149, 150; *Journal of Statistical Society*, vol. i. p. 102; *Winslow's Anatomy of Suicide*, 1840, pp. 131, 132; *Hawkins's Medical Statistics*, p. 170.

and ignorant monk, who, dreaming away his existence in an idle solitude, flatters his own vanity by denouncing the vices of others; and thus declaiming against the enjoyments of life, revenges himself on that society from which by his own superstition he is excluded. These are the sort of men who insist most strongly on the corruption of our nature, and on the degeneracy into which we have fallen. The enormous evil which such opinions have brought about, is well understood by those who have studied the history of countries in which they are, and have been, most prevalent. Hence it is that, among the innumerable benefits derived from advancing knowledge, there are few more important than those improved facilities of communication,[376] which, by increasing the frequency with which nations and individuals are brought into contact, have, to an extraordinary extent, corrected their prejudices, raised the opinion which each forms of the other, diminished their mutual hostility, and thus diffusing a more favourable view of our common nature, have stimulated us to develop those boundless resources of the human understanding, the very existence of which it was once considered almost a heresy to assert.

This is precisely what has occurred in modern Europe. The French and English people have, by the mere force of increased contact, learned to think more favourably of each other, and to discard that foolish contempt in which both nations formerly indulged. In this, as in all cases, the better one civilized country is acquainted with another, the more it will find to respect and to imitate. For of all the causes of national hatred, ignorance is the most powerful. When you increase the contact, you remove the ignorance, and thus you diminish the hatred.[377]

[376] Respecting which I will only mention one fact, in regard to our own country. By the returns of the Board of Trade, it appears that the passengers annually travelling by railway amounted in 1842 to nineteen millions; but in 1852 they had increased to more than eighty-six millions. *Journal of Statistical Society*, vol. xvi. p. 292.

[377] Of this, Mr. Stephens (in his valuable work, *Central America*, vol. i. pp. 247–8) relates an interesting instance in the case of that remarkable man Carrera: 'Indeed, in no particular had he changed more than in his opinion of foreigners; a happy illustration of the effect of personal intercourse in breaking down prejudices against individuals or classes.' Mr. Elphinstone (*History of India*, p. 195) says, 'Those who have known the Indians longest have always the best opinion of them: but *this is rather a compliment to human nature than to them, since it is true of every other people*.' Compare an instructive passage in *Darwin's Journal of Researches*, p. 421, with *Burdach*, *Traité de Physiologie comme Science d'Observation*, vol. ii. p. 61.

Конец ознакомительного фрагмента.