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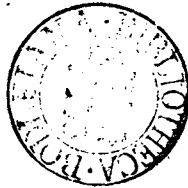
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A TREATISE ON MAN
AND THE DEVELOPMENT OF HIS FACULTIES.

By M. A. QUETELET,

**PERPETUAL SECRETARY OF THE ROYAL ACADEMY OF BRUSSELS, CORRESPONDING
MEMBER OF THE INSTITUTE OF FRANCE, ETC.**

NOW FIRST TRANSLATED INTO ENGLISH.



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PREFACE OF M. QUETELET,

DRAWN UP EXPRESSLY FOR THE PEOPLE'S EDITION OF HIS WORK ON MAN.

THE plan which has been pursued by me in the composition of this work, is a vast and comprehensive one. It was therefore natural, that, before drawing up a sequel to it, I should endeavour to learn the opinions of competent persons respecting the character of my researches, and the mode of execution which had been adopted in my treatise.* But in presenting, as it were, only the vestibule of the edifice, I might justly entertain fears lest sufficient light had not been cast on the matter, and lest I should not have been able to make it clear how all the portions of the vast whole were to arrive at agreement and consistency among themselves. In this state of things, it struck me that I could not do better than show, by particular examples, in what manner it is expedient in general to proceed in this line of inquiry, and in what light I viewed the analysis of man, under the triple relations of his physical, moral, and intellectual qualities.

The development of the three examples which I have chosen, will themselves give birth to as many works, the materials of which I am collecting with all the activity and speed that other engagements incidental to my position will permit. Whilst waiting till I can terminate these labours, I have deemed it right to give here an indication of them, and this will afford me, at the same time, an opportunity of clearing up some points in my published treatise, which may have been imperfectly understood.

As regards the *physique* of man, subjects of research are not wanting; but, besides that many of these subjects—as, for example, that of population—have frequently been discussed, and by men of great ability, they do not appear to me to be all equally suited to the end which I propose to attain; some are even complicated by their intimate dependence on moral phenomena, and these I wish to steer clear of as far as possible. The interest excited by the first researches into the growth of the human being, and the happy applications made of them in England, determined my choice of a subject, leading me to direct attention to the proportions of the human frame at different ages, and the causes which modify them. The subject appertains at once to science and the fine arts; and my relations in society permitted me to count upon the assistance of men of enlightenment, who promised to co-operate with me in my inquiries.

The study of the proportions of the human frame was carried very far by the Grecian artists, but they have left us no other monuments of their knowledge than those admirable works of sculpture, which the moderns regard to this day as models, and to which they resort for their finest inspirations. The principal artists of the era of the revival of letters, such as Leon Baptista Alberti, Michael Angelo, Leonardo da Vinci, Albert Durer, with many others who comprehended what art ought to borrow from science, felt the neces-

sity of resorting to observation, in order to rebuild in some sort the ruined monument of ancient artistical skill. They studied nature in a philosophical manner; sought to strike out the limits within which they ought to confine themselves in order to be truthlike, without taking away from each age, and one may say from any passion, its individual character; and from those profound studies which kept them ever before the face of nature, they deduced original views and new models, destined to distinguish for ever that celebrated age. The proportions of the human body did not alone attract their attention: anatomy, perspective, and chemistry, formed parts of their studies; nothing was neglected; and some of these great artists even gained for themselves a first place among the geometers of their day. Their successors have not devoted themselves to such serious studies, and hence it so frequently happens that they are reduced to content themselves, either with copying from those who went before them, or with working after individual models, whose proportions they modify according to mere caprice, without having any just or proper ideas of the beautiful.

It would be an error, doubtless, to suppose that science *makes* the artist; yet it lends to him the most powerful assistance. In general, it is difficult to keep it within due limits; and I shall even freely admit, that Albert Durer, in his work upon the proportions of the human frame, has imparted to it a certain scientific dryness, which lessens its utility. One finds there more of the geometer than the artist, and the geometer, moreover, such as he was at a time when it had not yet been discovered how much the rules of style enhance the value of scientific works, and, above all, of those which appertain at the same time to the domain of the fine arts.

After the example of Leon Baptista Alberti, whom he followed closely in the order of time, Albert Durer commences by stating the divisions of the body, in parts or proportions of the total height taken by him as *unity*. Changing afterwards his measure of proportions, he takes as unity the size of the head, and assigns successively the proportions of several individuals, giving them seven, eight, nine, and even ten heads of height [or, in other words, a body corresponding to the measurement of so many heads]. The scale thus formed by him has been received into all studios; and, without reverting *very* often to the measurements which their predecessors had taken from nature or from the works of the Greeks, artists have, for the most part, bound themselves down to follow a blind routine. Noble exceptions, however, have presented themselves. Nicholas Poussin, one of the most profound thinkers whom the arts have produced, took care to correct and regulate by the *antique* the proportions which Leon Baptista Alberti and Albert Durer had given from the living model. At a later period, also, some labours have been undertaken on this subject; and I may mention, in particular, those of the sculptor, Shadow of Berlin.

My aim has been, not only to go once more through the task of Albert Durer, but to execute it also on an extended scale. The German artist had his art exclusively in view, and confined himself to the obser-

* The work upon Man was published at Paris in 1835. In the year following, a copy of it was printed at Brussels; and, in 1838, Dr Riecke gave a German translation of the work, enriched with notes. The Brussels copy was published without my participation, and indeed against my will; such was not the case with the German version, concerning which I had communications with Dr Riecke.

vation and exhibition of man when fully developed, and at an age when he presents himself under the most advantageous forms. In order to keep faithfully by the plan which I had chalked out, I have viewed the individual from the hour of his birth; I have sought to determine, for that epoch, the different relations of bulk, subsisting between the various parts of his frame; and to ascertain how far these relations become modified during his development, what they are in the flower of his age, and in what position they remain up to the instant of decay. It is only by long and laborious study, and by the comparison of a vast number of individuals, that it will be possible to succeed in establishing correct average proportions for each age, and in settling the limits betwixt which they can be made to vary, without ceasing to be accurate and faithful to nature—our first and great guide in this difficult study.

If the inquiry into the average bodily proportions be of high importance, in order to attain to the type of beauty in the arts, not less great is the interest attached to the subject of the limits within which variations of them must be kept, in order not to shock the taste, and in order to retain the means of giving character to individual forms, of shadowing forth strength, grace, and dignity of figure, and of preserving to art that variety which constitutes its principal charm. Although *artificial* limits will always be less extended than the *natural* limits, yet it is to be observed that, by the term *natural* limits, I understand those within which the human proportions may vary, not only without constituting deformities and monstrous aberrations from nature, but also without wounding the eye by a want of harmony.

In order that the taste may be satisfied, it is necessary to present to it a whole of which it can seize readily all the parts, and mark their relations of bulk. But what are the natural limits spoken of? They are doubtless difficult to establish; nevertheless, every one has an idea of them, more or less exact, which he carries with him in his decisions. It is to determine these in a more precise manner that our endeavours ought to be directed. "This statue is beautiful," people will say; but they will agree in finding that the arms are too long. Without such a defect, it would have possessed more grace. The defect, at the same time, does not constitute a monstrosity, not even an anomaly; it may be conceived to exist in nature, and even without displeasing the taste; but it wounds the eye in a work of art, open to more severe rules of judgment.

In order to discover to what extent tastes and forms might vary in different countries, I have endeavoured to compare the proportions of the models, which, in the opinion of the artists of Paris, Rome, Belgium, and other places, united the most perfect graces of form; and I have been surprised to find how little variety of opinion exists, in different places, regarding what they concurred in terming the beautiful. Changes of bodily proportions characterise nations to a much smaller degree than differences in physiognomical expression, in delicacy and suppleness of members, and in ease, greater or lesser, of gait—all of them qualities modified singularly by education, climate, and habitudes.

Nor am I to confine myself, in my extended inquiry, to the comparison of actual models, estimated as types of the beautiful; I propose also to unite my results to those which artists left to us at the revival of the arts, and, above all, to what we can gather of the knowledge of the ancients on this point, from a study of their works. These comparisons, I conceive, will present hints interesting to history and art; they will prove of not less importance to the natural history of man. Analogous labours, undertaken in different quarters of the globe, would enable us to appreciate all that distinguishes race from race, and to discover the relative points of bulk most liable to variation; they would also furnish for the future valuable elements of comparison, not yet possessed by science.

All the sciences tend necessarily to the acquirement of greater precision in their appreciations. The study of diseases, and of the deformities to which they give place, has shown the benefit derivable from corporeal measurements, effected under enlightened views; but in order to recognise whatever is an anomaly, it is essentially necessary to have established the type constituting the normal or healthy condition. In order to be of use to science, I have deemed it necessary to direct my researches in a particular manner to the dimensions of the chest, which seem most frequently to merit consideration in the state of illness; and the same region is the one where the greatest malformations are most often to be observed.

The relative proportions of the human head merit equally our serious attention, serving, as they do at this day, for a basis, so to speak, of a new science. One of the individuals whose writings have spread the greatest interest respecting the study of phrenology, Mr George Combe, addressed to me, on the subject of the work on *Man*, the following words, which I shall beg leave to transcribe here, on account of the ingenious hints which they convey on the subject under consideration:—"Allow me to observe, that I desire much to see the physiology of the brain made the basis of such investigations, because I am convinced that the size, quantity, and proportions of the brain in individuals, have an influence over the development of their faculties, which is fundamental—that is to say, the brain determines the strength and the bent of the natural dispositions, and also the kind and degree of the intellectual capacity; and all external influences merely direct these to certain objects in preference to others, excite them to action, or impede their manifestations, but without changing the primitive character. Criminals, for instance, have the animal organs largely developed, and those of the moral and intellectual faculties, or at least the moral, deficient; and the causes of the regularity in the number of crimes will be found in the causes which produce a given number of defective brains annually; and crimes must be diminished by lessening the production of imperfect brains, or by treating those who have them as moral patients, and preventing them from abusing their propensities. Your researches are exceedingly interesting and useful, and all that I mean to say is, that this element is wanting to render them complete."

Nothing, doubtless, could be more interesting, above all in studying the moral development of man, than to be able to follow simultaneously the development of the organs which seem most directly connected with our actions, and to estimate to what extent the instrument is in concord with the effects produced by it. But for that purpose, it would be necessary that the science should be farther advanced than it really is; and that we should know the modifications which the head and brain of man undergo, from birth to the period of complete development, as well as the epochs at which the divers organs, regarded as the seats of such and such passions and propensities, manifest themselves, and what are their degrees of increase, actual and proportionate. This science, it seems to me, leaves as yet much to desire, and for the mere reason that it is yet in its infancy. I conceive that, in its actual condition, time would be more profitably expended in separating two kinds of studies which, in their results, might respectively control each other, than in seeking to amalgamate them, by which might be incurred the risk of falling into theoretic ideas, and quitting the path to truth. I shall explain myself by an example. Observation shows, that, in our state of society, it is about the age of twenty-five when the propensity to crime is at the maximum, especially as far as murder is concerned; this is a fact fully established, and of which new evidence is given every year by the statistical records of France. Now, supposing that phrenology had made sufficient inquiries

into the development of the organs, it might be possible to determine whether or not the age of twenty-five is really that at which the destructive organs have reached their greatest development, and if they sustain a progressive diminution afterwards, or are repressed by other and more powerful organs.

In considering matters under this point of view, it would be necessary first to study the progressive and proportionate growth of the brain and its several parts, and the development also of our moral and intellectual qualities. Comparisons might then be established to determine if the development of the faculties, and of the cerebral organs regarded as specially connected with them, takes place in a simultaneous manner. But to explain the actions by the organs, to render the one subordinate to the exercise of the other, would be to ramble widely from the course I have followed; for I am less desirous to explain phenomena than to establish their existence.

I have always comprehended with difficulty, moreover, how persons, pre-occupied doubtless by other ideas, have seen any tendency to materialism in the exposition of a series of facts deduced from statistical documents. In giving to my work the title of Social Physics, I have had no other aim than to collect, in a uniform order, the phenomena affecting man, nearly as physical science brings together the phenomena appertaining to the material world. If certain deplorable facts present themselves with an alarming regularity, to whom is blame to be ascribed? Ought charges of materialism to be brought against him who points out that regularity? What I have read and heard on the subject of my work, proves to me that I have not carried conviction to every mind, and that I have frequently been judged with prejudice. Judgments upon books are formed with even more haste and levity than judgments upon men. Writings are talked of without being known; and people take up an opinion for or against, in consequence of decisions of which it would cost them some trouble to determine the source. These are evils which must be borne with patience, and the more so because they are common. "There are few works on political economy," said Malthus to me, "which have been more spoken of and less read than mine." All the absurdities which have been spoken and written respecting the illustrious English author, are well known. Certainly, by an appeal against such decisions, he would have all to gain, and nothing to lose, before a less prejudiced tribunal.

One of the facts which appears to have excited the greatest alarm, out of all pointed to in my work, is naturally that relating to the constancy with which crime is committed. From the examination of numbers, I believed myself justified in inferring, as a natural consequence, that, in given circumstances, and under the influence of the same causes, we may reckon upon witnessing the repetition of the same effects, the reproduction of the same crimes, and the same convictions. What has resulted from this exposition? Timorous persons have raised the cry of fatalism. If, however, some one said, "Man is born free; nothing can force his free-will; he underlies the influence of no external causes; cease to assimilate him to a machine, or to pretend to modify his actions. Therefore, ye legislators, repeal your laws; overturn your prisons; break your chains in pieces; your convictions and penalties are of no avail; they are so many acts of barbarous revenge. Ye philosophers and priests, speak no more of ameliorations, social or religious; you are materialists, because you assume to mould society like a piece of gross clay; you are fatalists, because you believe yourselves predestined to influence man in the exercise of his free-will, and to direct the course of his actions." If, I say, any one held such language to us, we should be disgusted with its excessive folly. And wherefore? Because we are thoroughly convinced that laws, education, and reli-

gion, exercise a salutary influence on society, and that moral causes have their certain effects. Am I a fatalist, then, when I declare that you have greater reason for so thinking than you had imagined? That is the real state of the question; we differ only about degrees. Which of us is in error? To determine this, it is necessary to examine our motives for conviction. Mine, like yours, rest first of all on observation. We both call in experience to the support of our opinions; but, in your case, the experience is based on vague uncertainties, whilst I, more circumspect, strive never to lose sight of those scientific principles which ought to guide the observer in all his investigations. My aim is not to defend systems, or bolster up theories; I confine myself to the citation of facts, such as society presents to our view. If these facts be legitimately established, it follows that we must accept of and accommodate our reason to them.

Now, what do these facts teach us? I repeat, that in a given state of society, resting under the influence of certain causes, regular effects are produced, which oscillate, as it were, around a fixed mean point, without undergoing any sensible alterations. Observe, that I have said *under the influence of the same causes*: if the causes were changed, the effects also would necessarily be modified. As laws and the principles of religion and morality are influencing causes, I have then not only the hope, but, what you have not, the positive conviction, that society may be ameliorated and reformed. Expect not, however, that efforts for the moral regeneration of man can be immediately crowned with success; operations upon masses are ever slow in progress, and their effects necessarily distant.

But, it may be again asked, what becomes of human free-will and agency? In the face of facts, I have not to occupy myself with that question, so often debated. I cannot altogether pass it by, nevertheless, in silence, because it seems to me to involve one of the most admirable laws of conservation in nature—a law which presents a new proof of the wisdom of the Creator, and of which you have not caught even a glimpse in your narrow views of the moral organisation of man. It is necessary, then, to admit that free-will exercises itself within indefinite limits, if one wishes not to incur the reproach of denying it altogether. But, with all the follies which have passed through the head of man, with all the perverse inclinations which have desolated society, what would have become of our race during so many past ages? All these scourges have passed by, and neither man nor his faculties have undergone sensible alterations, as far at least as our observations can determine. This is because the same finger which has fixed limits to the sea, has set similar bounds to the passions of men—because the same voice has said to both, "Hitherto shalt thou come, and no farther!"

What! when it is necessary to take the most simple resolve, we are under the domination of our habitudes, our wants, our social relations, and a host of causes which, all of them, draw us about in a hundred different ways. These influences are so powerful, that we have no difficulty in telling, even when referring to persons whom we are scarcely acquainted with, or even know not at all, what is the resolution to which they will lead such parties. Whence, then, this certainty of foresight, exemplified by you daily, if you were not convinced, at the outset, that it is extremely probable the empire of causes will carry it over free-will. In considering the moral world *a priori*, you give to this free-will the most entire latitude; and when you come to practice, when you speak of what passes around you, you constantly fall into contradiction with yourselves. You foretell the conduct of individuals, in whose case oscillations may take place within limits so large, that it would be contrary to all the principles of the theory of probabilities to take them for the types of calculations, or to found upon

them the most petty inferences. Be more consistent with yourselves.

Could you possibly be afraid of applying the calculation of chances to moral phenomena, and of the afflicting consequences which may be inferred from that inquiry, when it is extended to crimes and to quarters the most disgraceful to society? "I should guard myself," said a scientific friend, whose philanthropic views I otherwise respect—"I should guard myself, had I arrived at the afflicting results of which you speak, against grieving others with the relation of them. Draw a veil over the hideous spectacle; and if you believe that you possess the truth, imitate with respect to it the sage circumspection of Fontenelle." But is the anatomy of man not a more painful science still?—that science which leads us to dip our hands into the blood of our fellow-beings, to pry with impassible curiosity into parts and organs which once palpitated with life? And yet who dreams at this day of raising his voice against the study? Who does not applaud, on the contrary, the numerous advantages which it has conferred on humanity? The time is come for studying the moral anatomy of man also, and for uncovering its most afflicting aspects, with the view of providing remedies.

This study is a difficult one. Speculative philosophy has long been occupied with it; but there are questions not to be resolved by such means; speculation has its limits, as observation also has. Every propensity and every passion, develops itself in a manner more or less rapid, attains a degree of maximum intensity, and declines in general by shades not yet fully recognised. It is with the intellectual as with the moral faculties of man; they both have their laws of development. With regard to some of them, these laws march in a parallel relation; others are interwoven in their growth, or stand in manifest opposition. Now, these are the laws which it is necessary to ascertain and comprehend, not in a vague manner, but with such precision as to enable us to establish numerically the degree of intensity for each age. There lay, if I do not deceive myself, the novel feature of my labours; thence sprung, at least, the chief meed of praise, and the criticisms which I have received; and it is this principle which I must strive to justify by my ulterior labours, because I was compelled to limit myself, in a first essay, to simple indications.

The analysis of the moral man through his actions, and of the intellectual man through his productions, seems to me calculated to form one of the most interesting parts of the sciences of observation, applied to anthropology. It may be seen, in my work, that the course which I have adopted is that followed by the natural philosopher, in order to grasp the laws that regulate the material world. By the seizure of facts, I seek to rise to an appreciation of the causes whence they spring.* As I could only indicate this course summarily, and the difficulties embarrassing it, I have been desirous to show, by two examples, selected and

* This appreciation is in general very difficult, and has given rise to grave errors. One of the chief causes of these errors seems to me to spring from the *incomplete enumerations*, made when it is sought to give an account of the causes which have led to any result. Thus, it is recognised that in some locality crimes are very numerous, and an attempt is made to explain that unfavourable state of things. How do most writers and even statisticians proceed in such a case? In place of passing in review all the causes which can lead to crime, of weighing their influences, and of inquiring into those, above all, which have there acted with the greatest energy, they only attend, in the prejudiced state of their minds, to one alone, often the least influential of all, to which they ascribe the effects produced by the whole. They have been led in this manner to conclude that popular instruction produces crime, because, in such and such a kingdom, the provinces where it chiefly abounds send the greatest number of children to schools; as if the degree of instruction, and the kind of instruction, and other elements, did not all enter equally into the question. The true talent of the observer, it seems to me, whatever be the phenomena of which he

treated in a searching manner, how the course in question should be followed. The one has for its object the examination of works of literature, philosophy, science, the fine arts, &c., and of the ages at which they have been produced, with the results to be deduced from the whole. The other example concerns the development of the propensity to crime, upon a scale more extended than I had yet had an opportunity of forming. After these last new researches, I conceive I may now confidently say, that the *tables of criminality* for different ages, given in my published treatise, merit at least as much faith as the tables of mortality, and verify themselves within perhaps even narrower limits; so that crime pursues its path with even more constancy than death. Twelve years have elapsed since the data furnished by the tribunals of justice in France were collected with great care and exactitude, and since the ages of criminals were first marked; and, in each succeeding year, they have reckoned from about 7000 to 8000 individuals accused before the courts of assize; and it is still betwixt the ages of twenty-one and twenty-five, that, all things being equal, the greatest number of persons are to be found in that position. I have taken, for the same years, and for the city of Paris, the mortality of a period of ten years, and have found, that, though my observations included a much larger number of persons, and these pertaining to a much more homogeneous population, the mortality of the capital proceeded with less regularity than the crimes of the kingdom, and that each age paid a more uniform and constant tribute to the jail than to the tomb.

An objection has been made to my views, which appears somewhat valid at a first glance. It has been forcibly reproduced by a writer of merit, who, while treating my work with liberality, has drawn together all the gravest objections brought forward against it. I shall take leave to cite his words. "We now reach the most delicate portion of M. Quetelet's work—the development of the intellectual and moral qualities, the social system. Here the field is not the same; we have no longer to do with phenomena vital and regular, or with those laws to which man is subjected along with the brutes, and which operate continually without his intervention, or constitute instincts in him too powerful to be resisted. We have to consider things which he is at liberty to do or not to do—acts which he may consummate or not consummate at choice. We enter into the domain of the human will—free, bold, and independent. Can science follow man in this new route? Will it be able to appreciate, in a manner at once comprehensive and exact, the results of the physiological and moral constitution of the mind and soul which distinguish him from other animals? Contented to follow, up to this point, the material phenomena revealed by evident facts, can science sound the heart of man, dive into the mysteries of spiritual being, and tear away for the human race the veil which the moralist can with

seeks to estimate the causes, consists in a complete enumeration of these, and in distinguishing between such as are entitled to weight, and such as may be overlooked without inconvenience. It is this fine insight, this delicate tact, principal attributes of superior intelligences, which constitute the great observer, the true philosopher. To wander from this course is to step into error, and to become entangled in those interminable disputes which afflict the sciences, and, above all, those whose phenomena are most complex. The medical sciences offer sad examples of this evil. Maladies are in general the result of an infinity of causes; and wherefore attribute them, then, to one of these more than to another? It may be conceived that two physicians, in citing each a different cause as the origin of one disease, may be both in the right, since each may have found the cause stated by him to have predominated in the case under his notice; they only err in neglecting the other influential causes which they have not had the chance of observing, because the number of their observations was too limited. This is the history of many of the theories and systems, alternately adopted and rejected in medicine.

difficulty raise in order to judge one individual? Risks she not being stranded in the conflict with these supreme mysteries of intelligence? Upon what constant facts, upon what fundamental points, can she lean for support? The facts of birth, growth, and decay, are the same for all men; but what are held by one people to be intelligence, genius, morality, and crime, will these not be deemed by another people error, poverty of intellect, immorality, and lawful actions? Finally, will not the free-will and agency of man disconcert all calculations? Or, at least, will not the errors in such calculations be too considerable in number and extent to leave them any real value?*

I have already spoken of free-will, and have shown how little it influences the number of crimes, and the ages of criminals; I shall not return, therefore, to that subject. The next most serious objection which seems to present itself here is, that the facts upon which one is compelled to rest have not the same identical value, as in the case of birth, death, and marriage, when the population is treated of; but that these facts may vary through many different shades, and may even be qualified amongst different nations, in consequence of what is crime with one being viewed as something lawful with another.

We must here understand ourselves fully. I can admit that a certain act, which is punished before the French tribunals, may not be so in other places, or have been so in other times. This is, then, an error of denomination which should be corrected, and which would but prove at most that virtues and crimes, estimated in relation to different times, have a contingent value merely, not an absolute one. The essential point here is, that the fact, qualified in one manner or another, should be the same. But it will be said, that it is not identically the same, and that even where the laws take care to specify and define different crimes, those which are ranged under the same head may still vary within pretty extensive limits. This is equivalent to saying, that the observations have not all the precision necessary, and that the estimate cannot be perfect. Now, this is a fact which I myself readily admit and regret; for, if the observations were precise, I should march on, in the new path which I have sought to open up, with as much assurance as in other quarters of the vast field of the sciences of observation. In every instance, it is not my method that is defective; proper observations alone fail me. But will it be ever impossible to have them perfectly precise? I believe that even at present we have them sufficiently so to enter, at least, on the great problem under consideration. Name them as you will, the actions which society stamps as crimes, and of which it punishes the authors, are reproduced every year, in almost exactly the same numbers; examined more closely, they are found to divide themselves into almost exactly the same categories; and, if their number were sufficiently large, we might carry farther our distinctions and subdivisions, and should always find there the same regularity. It will then remain correct to say, that a given species of actions is more common at one given age than at any other given age.

Is it really true, moreover, that the designation of crime may be so very arbitrary, and that that which has been set down as poisoning or assassination, for example, may testify to no evil inclination? Although we are here in a new field, where facts cannot be estimated mechanically, as in the physical sciences, the difference, nevertheless, is not to be held so great as it may appear at first sight. Even the physical sciences sometimes rest on facts which are not identically the same, as deaths and births should be; and which may lead to appreciations and conclusions more or less great. With the use even of an instrument, when one wishes to discover a temperature, a magnetic declination, or the force and direction of a

wind, does one really find the quantities which are sought? When one measures an individual, is the real height positively discovered? Errors, greater or lesser, may be committed; and observation alone can recognise the limits within which they range. Has the consideration of the average life of man been rejected, because that average rests upon numbers which vary, without doubt, within limits as extended as can be conceived?

But, to reply by the same argument brought against myself, if, in place of reckoning diseases, one wished to specify their nature, and to indicate, as statisticians do, the number of voluntary, violent, and accidental deaths, as well as those produced by natural maladies, without entering at all into the classifications which might be formed of these, would not one lie open to the same objections? Must we refrain from making up a list of suicides, because death may there have been caused by unknown hands, or by accidents of which no one is cognisant, or by some natural means which have operated instantaneously, and left no visible traces behind? And how often does it happen that the author of a suicide only lends his hands involuntarily to a crime of which another has guiltily reduced him to become the victim? One would require to renounce entirely the sciences of observation, if every such difficulty in the way were to be admitted as a let and barrier; and these are only more apparent in my researches, because we are less familiarised with their character.

The same writer whom I have cited, combats me on another point. I have attempted to give an example of the analysis of the development of the passions, which tends to show that their maximum energy is reached about the age of twenty-five years. "So that," said I, "if there existed an art which, in its exercise, developed itself in a ratio with the passions, and without requiring preliminary studies, its maximum of development would occur about the age of twenty-five."* "To this reasoning let us oppose an example," says the Genevese philosopher. "If there has been a writer who has shone brilliantly, and deeply impressed the public, by reason, not of his works and learning, but of the impulses of the passions, certainly Jean Jacques Rousseau is that man. Now, it was not before the age of forty, fifteen years later than the period signalised as the maximum one of his passions, that Rousseau commenced to write." What would be the reply of the author now quoted, whose writings on population are justly esteemed, if I were to say to him in my turn, that the death of J. J. Rousseau did not take place till after the age of 65 years; that is to say, a long period after the epoch signalised by the law of mortality calculated for Geneva, and after he had long passed the average life of man. Must we then conclude that the tables of mortality for Geneva should be rejected? What does one individual example prove in such matters?

I would remark, besides, that the words cited from my work, when viewed isolatedly, are far from expressing the idea which I wished to attach to them. The works of genius upon which our judgments bear are in general complex; for there is no work, constructed by genius, which does not suppose the exercise of various of its faculties. A skilful analysis could alone make out the part of each of them; I would suggest for this purpose the idea of a work which should have for its object the analytic examination of the development of our intellectual faculties for each age. Now, I have aimed to present, in the work here reproduced, only an essay, only a particular example, of such an analysis, "which tends to show that the maximum of energy of the passions occurs about the age of twenty-five." The minimum is not then determined; and even when it shall be, by a sufficient number of observations, one will no more be able to apply it to any given individual in particular, than

* Bibliothèque Universelle de Genève, July 1835, p. 313. Article of M. E. Mallet.

* "On Man," vol. ii. page 119, Brussels edition.

one could make use of a table of mortality to determine the period of his decease. It should be well understood that social physics never can pretend to discover laws which will verify themselves in every particular, in the case of isolated individuals. The science will have rendered a service sufficiently vast, in giving more precise views upon a host of points, of which vague glimpses only were before possessed. Thus, men speak generally of the age of the passions; they admit, then, that there is an epoch of the life at which the passions act with greater energy? How know they this? Doubtless, by the observation of man. Well, it is observation which the science of social physics will employ, but observation conducted in a more certain manner, after scientific principles, and not resting on fugitive glances of which one can preserve no durable traces.

I trust I may be permitted to notice here another objection which has been made, on the subject of the value which I believed it proper to attribute to average qualities. "You believe, then," it has been said to me, "that the type of health would be a mean betwixt all the constitutions existing—all the states of health? But then you must grant at least that your type would be more perfect if the average were struck upon those alone who were in health." This argument may appear at first sight an embarrassing one; but, when examined more closely, it may easily be shown to rest upon no solid foundations. I believe I might even say, retorting in some measure the argument, that, if the average were taken upon all men, the healthy excepted, it would remain still the same. This only would result, that, in order to obtain that average with an equal degree of precision, it would be necessary to draw it from an infinitely greater number of individuals. We may consider maladies like deviations from the normal state, be it more or be it less; and it is betwixt these contrary conditions that the state of health would be found.

We aim at a target—an end—marked by a point. The arrows go to right and left, high or low, according to the address of the shooters. In the mean time, after a considerable number of trials, the butt, which has not yet been touched, perhaps, a single time, becomes so well pointed out by the marks around it, that they would aid at once in rediscovering it, if it should chance to be lost sight of. Nay, more than this; even aims the most unfortunate may be made to conduce to this end; commencing with those marks which are farthest away, if they be sufficiently numerous, one may learn from them the real position of the point they surround.

This figurative reasoning is applicable, it may easily be conceived, to all inquiries into the physical sciences, and even the moral also, where the point in view is

to arrive at means or averages. As stated in the considerations presented at the close of my work, every quality, taken within suitable limits, is essentially good; it is only in its extreme deviations from the mean that it becomes bad. The study of these deviations or anomalies may serve to aid in the determination of the normal state, if it cannot be established in a direct manner. This presumes, it is true, that human nature, in its aberrations, has not a tendency to deviate from the mean in one sense in preference to another, as those who aim at a mark might have a tendency to shoot always too high or too low. Now, nothing proves the existence of any such tendency.

It may be imagined, after the preceding remarks, how much importance I attach to the consideration of *limits*, which seem to me of two kinds, *ordinary* or *natural*, and *extraordinary* or beyond the *natural*. The first limits comprise within them the qualities which deviate more or less from the mean, without attracting attention by excess on one side or the other. When the deviations become greater, they constitute the extraordinary class, having itself its limits, on the outer verge of which are things preternatural, or monstrosities. Thus, the men who fall, in respect of height, outside of the ordinary limits, are giants or dwarfs; and if the excess or the deficiency of height surpasses the extraordinary limits, they may be regarded as monstrosities. From the view of the human constitution, also, we may find the state of health and of sickness, and also a condition to be called extraordinary or preternatural. We must conceive the same distinctions in the moral world.

Narrow as may be the natural limits, they are yet too extended, as I have pointed out, when we wish to approach the beautiful in the arts. Artistical limits do not tolerate certain proportions, which nevertheless constitute neither physical defects nor infirmities.

The consideration of limits, upon which I insist, has convinced me more and more of the important part which they play in the social order. One of the most interesting observations which I have had occasion to make, is, that they narrow themselves through the influence of civilisation, which affords, in my eyes, the most convincing proof of human perfectibility. On the one side we approach more closely to what is good and beautiful; on the other, vice and suffering are shut up within narrower limits; and we have to dread less the monstrosities, physical and moral, which have the power to throw perturbation into the social framework. The distinctions which I had already established with care in my work, ought to have proved, methinks, to some less prejudiced judges, how far I am from a blind fatalism, which would regard man as unfit to exercise free-will, or meliorate the future condition of his race.

the maximum of intelligence will be found in the species which have the facial angle most nearly approaching to a right angle; which would give the pre-eminence to the Caucasian. I do not know if any observations have been made on a somewhat larger scale, having in view the measurement of the degrees of size of the facial angle at different ages, in order to determine if these are at all proportionate to the degrees of the development of intelligence.

Naturalists are also occupied in determining carefully what are the *limits* of the extent of the different elements belonging to man; these *limit values* have always been objects of attention, and ought to be carefully registered in the natural history of man, so that we might know, not only what is, but also what is possible.

The anatomical researches of Gall on the brain tend to show that the development of its different parts is proportionate to the development of certain corresponding faculties, which appear to have their seat there. Without entering into an examination of the doctrine of this learned physiologist, one must regret that his principles have not yet been submitted to more direct observations, and that it has not been examined whether the law of development of our faculties at different ages corresponds to the law of development of the presumed corresponding parts of the brain;* indeed, so far from knowing the relative proportions on these different points, it appears that, up to the present time, we have but very few data on the law of development of the brain itself, or upon its size and weight at different ages, either as regards average value or extreme limits.†

* Since the above was written, M. Broussais, to whom science is indebted for so many useful works, has read a memoir to the Academy of Moral and Political Sciences, on the influence of the physical on the moral, and, in particular, on the actual state of our knowledge on phrenology. M. Edwards has presented some considerations in support of this work, agreeing with it, also, in requiring scientific experiments on this new science. The principal conclusions of this learned physiologist are contained in the following note, for which I am indebted to his friendship:—

“The proofs on which we found our convictions are referred to two principal classes; the first includes proofs which may be called *individual*, and the second those which we shall call *scientific*.

In the first case, we cannot be convinced of the truth of certain relations without verifying them ourselves. Thus it is necessary that every individual who wants to form an opinion, must himself make the proof which others have done. In the second case, on the contrary, when we are considering a *scientific* proof, if it has been properly obtained, it is enough to receive the knowledge to be convinced of the truth. Thus we dispense with the necessity of personally making the proof again.

In general, the kind of proofs on which phrenology rests belong to the first class, or those here called *individual*; because it is always necessary that each *individual* who wishes to know what to maintain should repeat the proof.

This is the condition in which phrenology stands. It is evident that, if the relations pointed out are generally true, any one who has sufficient knowledge may convince himself by a sufficient number of observations; but he could not transmit to another his conviction, unless one could know the extent and measure of his experience.

Now, if that could be expressed in a determinate manner, the proof would be no longer individual but scientific; and not only he who had acquired could communicate his conviction, but the latter would also be able to impress it on others; for it is the peculiarity of scientific proof that it forces general conviction on those who can understand it. Other persons are obliged to admit on hearsay, that is, on the authority of the first class. Now, phrenology, if true, is really capable of scientific proof.

It is by forming a sort of statistics, the plan of which might be readily designed, that the scientific proof of this doctrine is practicable. It is greatly to be desired that phrenologists would do this.”

† M. Guerry wrote to me in 1831—“I am now occupied, along with M. le Docteur Esquirol and M. le Docteur Leuret, with the statistics of insanity. We measure the head, in every direction, of every person at Charenton, the Bicêtre, and the Salpêtrière. We

2. Of the Average Man considered in reference to the Natural and Medical Sciences.

It will not be necessary to insist forcibly, to natural philosophers, on the importance of the investigation of the different laws of the development of man; indeed, without the knowledge of these laws, the science of man cannot be complete or philosophic. I think the utility of the methods of determining them, which I propose, needs not to be explained to them again; several of these have been familiar to them for a long time, and others form a part of their usual modes of proceeding in fathoming the secrets of nature.

In the eyes of the naturalist, the average man is only the type of a people; numerous observations have shown that this type is not unique, and consequently that there are different races of men. But the characters on which these distinctions are established have not been sufficiently defined; indeed, how can we study the modifications which the elements relative to man, as well as their laws of development, undergo in the different races, when we have not settled the point of commencement?

Hence, also, proceeds the difficulty of surmounting the greater number of the most interesting and philosophical questions of natural history. It is frequently asked if the human species has deteriorated, or if it is capable of deteriorating at any time; but this problem, for want of the elements for its solution, remains without a satisfactory answer.

It is also asked if there is a type or standard of the beautiful for the human species, which is proportionate to the development of intelligence. Comparative anatomy has been thought to find an affirmative solution of this question, in the magnitude of the brain and the size of the facial angle, which, according to the delicate researches which have been made, diminishes in proportion to the lowering of intelligence in men and animals; and it has been inferred from this, that

We ought also to state with more care than has yet been done, the capacity of our organs, and the limits they can attain.

If the average man were completely determined, we might, as I have already observed, consider him as the type of perfection; and every thing differing from his proportions or condition, would constitute deformity and disease; every thing found dissimilar, not only as regarded proportion and form, but as exceeding the observed limits, would constitute a monstrosity.

The consideration of the average man is so important in medical science, that it is almost impossible to judge of the state of an individual without comparing it to that of another imagined person, regarded as being in a normal condition, and who is intrinsically no other than the individual we are considering. A physician is called to a sick person, and, having examined him, finds his pulse too quick, and his respiration immoderately frequent, &c. It is very evident, that to form such a decision, we must be aware that the characters observed not only differ from those of an average man, or one in a normal state, but that they even exceed the limits of safety. Every physician, in forming such calculations, refers to the existing documents on the science, or to his own experience; which is only a similar estimate to that which we wish to make on a greater scale and with more accuracy.

Moreover, the data which the average man presents, can themselves only serve to furnish others more important, and which relate to the individual observed. To explain my idea, I shall suppose that every man has the knowledge and prudence necessary to examine himself carefully, and to determine all the elements which compose him, and the limits within which they may vary, in a state of health: he will form a table differing more or less from that of the average man, and which will assist him in recognising whatever is more or less anomalous in his own case, and whatever imperiously demands attention. It would be this table which the physician should consult in the case of illness, in order to estimate the extent of the divergences from the normal state, and what are the organs more especially affected. But as, in the greater number of cases, the sick person can make no satisfactory observations on his own person, nor any elements which are peculiar to him, the physician is obliged to have recourse to the common standard, and compare his patient with the average man; a course which, in fact, seems to present less difficulty and inconvenience, but may also cause serious mistakes in some circumstances. For here, again, we must observe that general laws referring to masses are essentially imperfect when applied to individuals; but we do not mean to say that they can never be consulted with advantage, or that the divergences are always considerable.

A prudent man, who studies and observes his constitution, also measure the cerebrum and cerebellum of those who die. I have thus been led to undertake the *Histoire du Développement de la Tête Humaine Moyenne*. I have been led to it entirely from having read your excellent Memoir on the Stature of Man. Fifteen days ago, we noted the state of the pulse of ninety maniacal persons, between five and seven o'clock in the morning, and whilst they were at breakfast. We already have found certain periodic returns in the number of the pulsations; these observations will be continued to the end of the month.

I hope to be able to measure the angles of the head very exactly, so as to obtain the proportions and form of an average maniacal head, of one hallucinated, of an idiotic, imbecile, and epileptic one, &c.—(Notes on my *Recherches sur le Penchant*, &c.) It is to be regretted that this announced work has not yet appeared.

At the end, however, of the work, *De la Frequence du Pouls chez les Alienés*, M.M. Leuret and Mitivié give the result of their researches on the specific weight of the brain of the insane, which prove that there is no marked difference in this respect between insane and healthy persons. The specific weight has an average value, represented by 1.031, water at 15° of temperature being considered as unity.

stitution, may prevent many diseases, and scarcely needs to have recourse to professional men, except in severe and extraordinary cases. His habit of observing himself, and the knowledge which he has thus obtained, form, in some measure, a kind of table giving him the elements of his constitution. In general, we only call in the physician when indisposed: I think it would be useful were he also to see us when in a state of health, so that he might obtain a better knowledge of our normal state, and procure elements of comparison necessary for cases of anomaly and indisposition. It is very evident that a physician, called to a patient whom he sees for the first time, and of whose constitution he is absolutely ignorant, will, in certain circumstances, commit errors by submitting him to the common rule.

I shall not pursue these remarks, the truth of which, I venture to think, will be appreciated. The constitution of the average man serves as a type to our kind. Every race has its peculiar constitution, which differs from this more or less, and which is determined by the influence of climate, and the habits which characterise the average man of that peculiar country. Every individual, again, has his particular constitution, which depends also on his organisation and his mode of existence. It is consequently interesting to know each of the elements which concern us individually, and we have a general interest in knowing each of the elements which bear on the average man, who is the type to which we should incessantly have recourse.

3. Of the Average Man considered with respect to Philosophy and Morals (*la Morale*).

Human nature (*humanité*) is modified by necessities of time and place. The development of the different faculties of the average man ought to be closely proportionate to these necessities: this is a condition essential to his existence and continuance. If the average man, at different epochs, had been determined carefully, we might at this day perceive what laws of development have undergone the greatest change: we should possess the most valuable means of analysis; and we should also learn what have been the qualities which have successively predominated and exercised the greatest influence on our social system.

The laws of development of the average man, at such or such a period, must not be confounded with the laws of the development of human nature* (*humanité*). There is but little general conformity betwixt them: thus, I should be much disposed to believe that the laws of development of the average man continue almost the same through successive centuries, and that they only vary in the magnitude of maxima. Now, it is really these maxima, relating to the developed man, which give the measure of the development of human nature in each century. We do not possess any exact documents to guide us in such a research, but it would appear that, physically considered, collective man is scarcely progressing; yet it has been observed that a civilised man is generally stronger than a savage. As to intelligence, his progress cannot be questioned, and his existing state of develop-

* To render my idea sensible by a figure (see *plate 4*), I suppose that we construct the line indicating the development of the strength of man at any given period; and that on the same axis of the abscissæ we also construct the corresponding similar lines for other periods, so that these lines succeed each other at the distance of a century, for example, proceeding from points whose distance from each other increase as the time; it will happen that the maxima of the ordinates will not correspond to the same ages or have the same magnitude. Now, connecting all the points of maxima by a line, which will evidently be the container (*l'enveloppe*) of all the curves representing the law of individual development in all the modifications which it has undergone in the course of time, we shall have the curve which represents the general law of the development of human nature (*humanité*). By similar processes, we may render equally apparent all the laws of development of the different faculties of the human species.

ment undoubtedly exceeds what it has been at any other time. Also following, with history in our hands, the average type of human nature through different centuries, we see man, at first, in possession of all his strength, blindly taking advantage of it, and attaching to the world of matter a power and a range altogether limitless: the king of nature, he has plants, animals, and even the stars, as tributaries. But, as his reason becomes developed, a new world is unrolled before his eyes, contracting the limits of the former one; the intellectual man gradually supplants the physical one; and it is this continually increasing triumph of the intellectual man, which the history of the arts and sciences presents to us at every page.

I have said that, although the laws of the development of human nature were not generally the same as those of the average man of any one period, yet these laws might, in certain circumstances, be identically the same; and that human nature, under certain relations, might be developed in a manner similar to a single individual. I should be much disposed to believe that this is the case with the collective human mind; indeed, following it in its uncertain and irregular course, we see it endeavour to strengthen itself from the very beginning, reach in due time the highest conceptions, and present almost the same phases as the intellect of the individual man from infancy to maturity. The human mind is at first astonished at the sight of any thing beyond the ordinary course of things, and attributes the most simple occurrences to the caprice of supernatural beings, instead of deducing them from immutable laws, which are alone worthy of a divine intervention. We see it afterwards pursuing a course which is more certain and conformable to reason, observing facts, isolated at first, then classing them, and inferring the consequences. Still later, the mind learns to interrogate nature by experiment, and to reproduce transitory phenomena at will, under the most favourable circumstances for observing them. And when its reasoning powers have reached full maturity, then it studies the nature of causes, seeks to value their reciprocal intensities, and thus raise itself to a knowledge of the attendant phenomena which they must produce. Such is the development which we see the human mind undergoing when we study its progress in the history of the sciences; such, also, is the course which the intellect of man pursues from infancy to maturity.

I have said before, that the average man of any one period represents the type of development of human nature for that period; I have also said that the average man was always such as was conformable to and necessitated by time and place; that his qualities were developed in due proportion, in perfect harmony, alike removed from excess or defect of every kind, so that, in the circumstances in which he is found, he should be considered as the type of all which is beautiful—of all which is good.

If human nature were stationary and not susceptible of amelioration, it is evident that the average man would also continue invariable; and his different qualities, instead of presenting the type of the beautiful and excellent of the period at which he lives, would present the type of the absolutely beautiful and excellent in the most general sense. Thus, when we say that the type of the beautiful, as to the form of man, is absolute, we mean that the average man ought not to differ from this proportion, and that human nature cannot advance further. It is not so with reason: the vast conquests of science, by giving more accurate notions of an infinite multitude of things, and by destroying errors and prejudices, have necessarily furnished our reason with the means of rising to a still greater height, and arriving at a relative degree of perfection, the idea of which could not so much as be conceived some ages ago.

Such should also be our criterion as to morals. Human qualities become virtues, when they are equally

removed from all the excesses into which they may be disposed to fall, and confined within due limits, beyond which every thing is vice.* If these limits do not vary in the course of time and among different people, we have strong probabilities for believing that this virtue has an absolute value. Now, this is what we remark generally concerning most moral qualities: they admit a type which we may with great probability consider as absolute, so that human nature, considered in reference to these qualities, will not be progressive. Yet there are qualities the importance of which has varied in the course of time, and which has increased or diminished with the development of reason, on which they depend, at the same time that the physical has yielded preponderance to the intellectual man. Thus courage, which, in the earliest ages, raised a man to the first rank, and, in some manner, assigned to him a place near to divinity, has diminished in importance beside other qualities more in harmony with our manners and present actual necessities. The qualities of a contingent value, if I may so express myself, are in a measure subordinate to the law of development of human nature, and to the different principles of conservation; they generally produce more renown than the others, because men have a more direct influence in encouraging them.

The natural consequence of the ideas which I have just stated, is, that an individual who should comprise in himself (in his own person), at a given period, all the qualities of the average man, would at the same time represent all which is grand, beautiful, and excellent. But such an identity can scarcely be realised, and it is rarely granted to individual men to resemble this type of perfection, except in a greater or less number of points. M. Cousin, setting out from very different considerations to those which are the object of this work, has nevertheless been in some measure led to conclusions similar to those I have just deduced from the theory of the average man. Speaking of the character peculiar to great men, he finds that this character consists in comprising people, periods, all human nature, nature, and universal order.† “Thus,” says this learned academician, “all the individuals of which a people is composed, represent the whole mind of this people. But how do they represent it? One people is one in mind; but this is a multitude in its external composition, that is to say, a great multiplicity. Now, what is the law of all multiplicity? It is, to have differences (*d'être diverse*), and, consequently, to be capable of more and less. Apart from absolute unity, every thing comes within the sphere of difference (and has degrees) of greater and of lesser. It is impossible but that, in a given multitude, such as a people, which, as has been shown, has a common type, there should be individuals who represent this type more or less. As there are those who represent it less clearly, more confusedly and imperfectly, so there are also those who represent it more clearly and perfectly, and less confusedly. Hence a line of demarcation between all the individuals of one and the same people. But those who are on the first plane, and represent the entire mind of their people more completely, are nevertheless a multitude, a great number, and are still subject to shades of difference: whence, again, a new selection of individuals who eminently represent the mind of their people. It is impossible for the case to be otherwise. From this we infer two things: first, the necessity of great men; second, their peculiar character (*caractère propre*). The great man is not an arbitrary creature, who may be or may not be. He is not simply one individual, but he has reference to a general idea, which communicates a superior power to him, at the same time that it gives him the determinate and real form of individuality. Too much and too little individuality equally destroy the great

* This is what the ancients thought generally, and in particular, Aristotle—*Eth. ad Nic 2, ch. 2.*

† Cours de Philosophie, leçon 10.

man. In the one case, the individuality in itself is an element of misery and littleness; for the particularity, the contingent, the finite, incessantly tend to division, to dissolution, to nothingness. On the other hand, every generality being connected to universality and to infinity, tends to unity, and absolute unity: it possesses greatness, but runs a chance of losing itself in chimerical abstraction. The great man is the harmonious union of particularity and generality: it is the possession of this character alone which makes him great—this added representation of the general mind of his people; and it is his relation to this generality which makes him great; and, at the same time, to represent this generality which confers his greatness on him, in person and in a real form, that is to say, in a finite, positive, visible, and determinate form; so that the generality does not encumber the particularity, and the particularity does not destroy generality; so that particularity and generality, infinite and finite, are united in this measure or standard, which is true human greatness.

"This measure, which constitutes true greatness, also constitutes true beauty," &c.

The passage which has just been quoted, expresses my ideas better than I could have succeeded in doing myself. A man can have no real influence on masses—he cannot comprehend them and put them in action—except in proportion as he is infused with the spirit which animates them, and shares their passions, sentiments, and necessities, and finally sympathises completely with them. It is in this manner that he is a great man, a great poet, a great artist. It is because he is the best representative of his age, that he is proclaimed to be the greatest genius.

It is never sufficient for a man merely to resemble the average man in many things as much as possible, to enable him to produce great things himself; it is moreover necessary that he has occasion and possibilities for action. Newton, for example, deprived of all the resources of science, would always have had the same strength of intellect; he would always have been a type of several eminent qualities, and, in particular, of correctness of judgment and imagination; but if only a greater or smaller amount of science had been laid within his reach, he would have been Pythagoras, Archimedes, or Kepler; with all the resources which his period possessed, he has, and must have been a Newton. This appears to me incontestible: in the favourable position in which he found himself, it was a matter of necessity for him to put his eminent faculties in action, and to advance as far as circumstances permitted him. Now, the sciences had arrived at such a point, as to render it necessary that the theory of the motion of the celestial bodies should be reduced to correct principles; and Newton was then the only man who combined the necessary conditions to accomplish this work.

It appears to me that science only is truly progressive, and I use this word in its widest sense. All the faculties of man which are not based on science are essentially stationary, and their laws of development are constant. As to the other faculties, their laws of development, as has already been observed, probably remain the same also, or at least each only undergoes changes in the degree of its maximum, which depend on the development which science has attained. The development of science would therefore give the measure of the development of human nature.

Consequently, I participate in the following opinion of M. Cousin, that "entire history, not that of one people or one epoch only, but that of all epochs and all human nature, is represented by the great men. Thus, give me the series of all the known great men, and I will give you the known history of the human race."*

And, indeed, from what we have seen, the great

* *Cours de Philosophie*—Introduction à l'Histoire de la Philosophie, leçon 10.

man, in his individuality, is the best representative of the degree of development to which human nature has attained in his times, and his works show the extent in which he himself has aided that development.

We are more convinced of the necessity of great men, and the error we commit in supposing that they spring up accidentally, when we consider the immense time required for a great truth, after it has been shadowed forth, to diffuse itself, and descend to the mass of people, and produce its effects; in general, it is not until centuries after, that we see the man come forward who develops or personifies it and secures its triumph. Thus, the germ of the great revolution, which has marked the close of the last century, was brought forward long ago, and was slowly developed, descending from high intellects to the lower ranks of society; but its course had not escaped the sagacious observer. Great events are, like great men, necessitated; and how can we be surprised at this, when we have seen that even the actions of ordinary individuals are necessitated, and when we have seen that a given social organisation induces a certain number of virtues and crimes as a necessary consequence, and that these crimes are of such or such a kind, and are performed by such and such means? This necessity is found both in good and evil—in the production of good things as well as of evil—in the production of *chefs-d'œuvre* and noble actions which are an honour to a country, as well as in the appearances of scourges which desolate it.

ments ought to be of such a nature, that we can rigorously deduce the averages and limits between which the particular values lie. I have myself been more than once obliged to deviate from the course which I wish to see pursued by others, because, in order to render my ideas plain, I have been obliged to take the assistance of examples.

It will be equally desirable, whenever numbers are used, and results deduced from them, that we calculate the probable degree of error carefully. It is not enough to possess materials; it is also necessary to know the full value of them. One of the greatest defects of actual statistics is, that in the same line they present all the numbers indistinctly which can be collected, and make them concur to one result, without taking their importance or probable value into account. This confusion must necessarily produce great obstacles to the progress of science, and cause dangerous errors to prevail for a long time.

There is another research which deserves no less attention. It is not sufficient to perceive that an effect depends on several causes; it is extremely important that we be able to assign the proper degree of influence of each of these causes: in bringing this work to a conclusion, I shall now employ myself in demonstrating the possibility of finding a suitable measure for such an appreciation.

In the first place, it is necessary to admit, as a principle, that where variable causes do not exist, the effects produced will constantly be the same; and that the more variable the causes are, the effects will also generally vary within wide limits. Thus, supposing that human volition acts independently of all fixed laws, and in the most varied and irregular manner, we must necessarily find the effects produced presenting the greatest anomalies also, and differences varying within the widest limits. Now, it is these differences which it is desirable to examine and measure.

To define our ideas, let it be supposed that we want to examine if any general causes exist which modify the repression of crime; in other words, which modify the severity with which the guilty are punished. We must necessarily have recourse to observations which have been very carefully collected; and, if the annual results are not constantly the same, we shall be obliged to admit that the variations proceed either from errors of observation, from the influence of local causes, or from the influence of moral causes inherent in man. Going deeply into these researches, we really find that these elements vary according to time and place. Now, since the number of probable influential causes may be extremely great, it is proper to investigate them individually: it is in this manner that we are (at) first enabled to separate from our results the influential causes depending on locality, all our observations being taken in the same country; and that we may also eliminate the influential causes depending on periodicity of season, by carrying our researches over the whole year, whence we return to the appreciation of all the influential causes, taken separately.

Uniting the statistical documents of the courts of assize in France for the six years before 1831, we find:—

Years.	Accused.	Condenned.	Repression.
1825, - - -	7,234	4594	0.635
1826, - - -	6,988	4348	0.622
1827, - - -	6,929	4236	0.610
1828, - - -	7,336	4551	0.615
1829, - - -	7,373	4475	0.607
1830, - - -	6,962	4130	0.593
Average, -	7,147	4389	0.6137

This table shows us that the repression of crimes

CHAPTER II.

ON THE ULTIMATE PROGRESS OF OUR KNOWLEDGE OF THE LAWS OF HUMAN DEVELOPMENT.

In this work I have only been able to present an incomplete sketch of the vast labour which still remains to be done; but the difficulties were too numerous, and the materials which I had to work up too defective, for me to venture any farther into a territory almost entirely new. This study, however, has too many attractions—it is connected on too many sides with every branch of science, and all the most interesting questions in philosophy—to be long without zealous observers, who will endeavour to carry it farther and farther, and bring it more and more to the appearance of a science. At the same time, it will be very difficult to proceed on a safe course, before more information and more exact observations than we now possess, have been collected. The solidity of the edifice must depend on the soundness of the material.

In researches of this nature, it will be necessary always to produce original documents with caution, point out their sources, and give all the data which may lead us to appreciate their value. These docu-

in general, has been annually decreasing, certainly not very much, but yet manifestly. Now, of the causes influencing repression, some act in a constant and others in a variable manner. By virtue of the former, the number 0.6137, which expresses the repression of crimes in general, should have a constant value from one year to another; by virtue of the action of the variable causes, the same number would undergo greater or less modifications. I shall first be occupied with the measurement of the influence of the constant causes.

To give a better conception of my idea, I suppose an individual labouring under an accusation; as we have just seen, the chance of being condemned will be as 614 to 1000; this probability should be understood in the most general sense, admitting that as yet we know nothing of the nature of the crime, the age, or the sex, of the accused, or of the state of education, or any of the constant causes modifying the repression of crime. But if we learn the fact, that the accusation is for a crime against persons, the probability of being condemned is altered; indeed, experience proves that the repression of crimes against persons is less than that of crimes against property. In France, the average values have been from 0.477 to 0.665, for the six years previous to 1831. Thus the chances are only 477 in 1000 that the individual will be condemned when accused of crime against persons; 655, when the crime is one against property. The principal cause of this inequality appears to be, as has been frequently remarked, that we are averse to apply punishment when it has a certain degree of severity, or appears severe in proportion to the crime; this is especially the case with crimes against persons.*

The sex of the accused has, moreover, a marked influence over the repression of crime: the severity is not so great towards females. All these shades will be more evident on inspecting the following table, which points out the different degrees of probability which exist of an accused person being condemned, according as the causes are favourable or the contrary:—

State of the Accused Person.	Probability of being Condemned.
Possessing a superior education,	0.400
Condemned who has pleaded guilty,	0.476
Accused of crime against person,	0.477
Being able to read and write well,	0.543
Being a female,	0.576
Being more than 30 years old,	0.586
Being able to read and write imperfectly,	0.600
Without any designation,	0.614
Being a male,	0.622
Not being able to read or write,	0.627
Being under 30 years of age,	0.630
Accused of crime against property,	0.655
Condemned in absence, or for non-appearance (<i>contumax</i>),	0.960

Experience, therefore, proves that the most influential cause diminishing the repression of crime consists in the appearance of the criminal before the judge with the advantage of a superior education, which supposes a certain degree of affluence, and the ready means of making a defence. The most advantageous position an accused person can possibly be in, is to be more than 30 years of age, a female, to have received a superior education, to appear under an accusation of a crime against person, and to come when cited, previously to being taken into custody; on the contrary, the most disadvantageous state is to be under 30 years of age, unable to read or write, to be a man, and accused of crime against property, and not to be

* [Here, as in other places, M. Quetelet gives his important sanction to the principle upon which the amenders of the criminal laws of England chiefly found their arguments for reform. The severity of the punishment leads to the escape of the criminal.]

able, as refusing to appear when cited, to produce the means of defence.

The causes which modify the probability of being condemned, according to the state of the accused person, appear to me so evident, as to render it superfluous to insist on them. Such is not the case with the degree of influence of these causes; this estimation is attended with difficulties. Reflecting upon it, it has appeared to me that, of all the numerical elements subject to variation, we might very easily estimate the importance of the deviations from the average, or the importance of the causes which produce them, by comparing these deviations with the magnitude of the average. It is almost in this manner that the first geometricians who studied the theory of probabilities as applied to facts bearing upon man (and Buffon, in particular), have estimated the importance of a whole, for one individual, by comparing it with what this individual possessed.

According to this estimation, it will be necessary to take the deviations from each of the ratios calculated above, and compare these with the number 0.614, the measure of the repression in France, when we do not pay attention to any modifying cause; the respective magnitude of the deviations will give this measure of their importance, and consequently that of the causes which produce them, effects being considered as proportional to their causes. Let us suppose, for example, that we seek to ascertain the value of the respective influences which are exercised on the repression of crime in France, by possessing the advantage of a superior education, and being a female; we find the values of the repression are 0.400 and 0.576, and the differences between these numbers and the general average, 0.614, are 0.214 and 0.038. From what has been said, the importance of these differences, or of the causes which produce them, will be $\frac{214}{614}$ and $\frac{38}{614}$,

or otherwise, 0.348 and 0.062. From this we perceive that a superior education has five times the influence which being a woman has, in diminishing the repression of crime before the tribunals. The following table presents the degrees of influence of the different causes modifying the repression of crime, and has been calculated upon the same bases:—

State of the Accused.	Relative degree of the influence of the state of the Accused on the Repression of Crime.
Possessing a superior education,	0.348
Appeared to plead after having been declared absent or contumacious,	0.224
Accused of crime against persons,	0.223
Being able to read and write well,	0.115
Being a female,	0.062
Being more than 30 years of age,	0.045
Being able to read and write imperfectly,	0.028
Without any designation,	0.000
Being a man,	0.013
Being unable to read or write,	0.022
Being under 30 years of age,	0.026
Accused of crime against property,	0.057
Having withdrawn from justice, or for non-appearance when cited (<i>contumax</i>),	0.563

Thus, as I have already observed, there is not any cause which has more influence in varying the repression of crime, than the reluctance or non-appearance of the accused to answer charges. The preceding table does not merely possess the advantage of showing this clearly, but also shows the degree of influence of the cause producing it.

And here there is a question of another kind, viz., how far those causes may be regarded as constant which have now been pointed out. For, before one can say that they are absolutely constant, it must be shown that the results which they produce continue the same from year to year. Now, this is what does

not take place: the deviations from the average, which we have taken as constant quantities, annually undergo slight modifications, which we have attributed to *variable* causes: these modifications are in general very small, when we only take a small number of years into account; but still it is necessary to notice them. The repression of crime in general, for example, has not been constantly of the value 0.614 during the six years which have furnished the elements of our calculations; small annual differences have been observed, and the repression, in its greatest deviations from the average, more and less, has been 0.635 and 0.593; the deviations are consequently 0.021 and 0.021; and consequently their ordinary value is $\frac{91}{64}$, or 0.034. Thus the variable causes

which have produced alterations of the degree of repression, have had, in their maximum and minimum of energy, influences which have equalled or even surpassed the influences of some causes which we have been considering as constant. To have a juster idea of the variable causes, it will be proper to examine the effects which they have annually produced on each of the elements considered above. The following tables will supply us with data on this subject:—

Years.	Repression of Crimes		Repression.	
	against Persons.	against Property.	Men.	Women.
1825, - - -	0.46	0.66
1826, - - -	0.61	0.67	0.63	0.60
1827, - - -	0.50	0.63	0.62	0.60
1828, - - -	0.47	0.66	0.63	0.57
1829, - - -	0.46	0.65	0.62	0.57
1830, - - -	0.46	0.64	0.61	0.54
Average, -	0.477	0.655	0.723	0.576

Years.	Repression in Individuals		Repression.	
	under 30 Years.	above 30 Years.	Not Appearing.	Appeared to stand Trial.
1826, - - -	0.64	0.60	0.93	0.49
1827, - - -	0.64	0.58	0.97	0.45
1828, - - -	0.64	0.58	0.97	0.46
1829, - - -	0.62	0.59	0.97	0.50
1830, - - -	0.61	0.58	0.96	0.48
Average, -	0.63	0.586	0.96	0.479

Years.	Repression in Individuals			
	unable to Read or Write.	able to Read and Write imperfectly.	able to Read and Write well.	who had a Superior Education.
1826, - - -	0.63	0.63	0.56	0.35
1829, - - -	0.63	0.60	0.55	0.48
1830, - - -	0.62	0.58	0.52	0.37
Average, -	0.627	0.60	0.543	0.40

These different tables teach us that the greatest variations which any of the constant causes modifying the repression of crime have undergone, have scarcely exceeded the value of the intensity even of these causes: or, in other terms, that in the very circumstances most unfavourable to observation, the effects of constant causes have been but little effaced by the effects of variable and accidental causes. We shall be enabled to judge better on this point by the following table, which discriminates for us the importance of the greatest deviations which the causes modifying repression have presented in each of the cases above enumerated:—

Causes which Modify Repression.	Difference from the Average.	
	Less.	Greater.
The accused has a superior education, - -	0.200	0.125
.. .. appears to answer charge, - -	0.050	0.056
.. .. is prosecuted for crime against person, - - - - -	0.069	0.035
.. .. is able to read and write well, - -	0.031	0.042
.. .. is a female, - - - - -	0.042	0.062
.. .. is upwards of 30 years of age, - -	0.024	0.027
.. .. is able to read and write imperfectly, - - - - -	0.033	0.033
.. .. is without any designation, - - - -	0.034	0.034
.. .. is a male, - - - - -	0.013	0.019
.. .. is unable to read or write, - - - -	0.005	0.011
.. .. is under 30 years of age, - - - - -	0.016	0.028
.. .. is prosecuted for crime against property, - - - -	0.039	0.018
.. .. does not appear when cited, - - -	0.010	0.031

I have always reasoned on the hypothesis that our results were founded on so great a number of observations, that nothing fortuitous could affect the value of the averages: but this is not the case here. Some results are deduced from observations which are yet small in number, and we know that, all things being equal, *the precision of results increases as the square root of the number of observations.* This is especially applicable to any thing concerning the repression (punishment) of the accused persons who have received a superior education. The values obtained are deduced from a small number of observations, and the deviations from the average of them have consequently been greater: now, by employing the method of the smallest squares, I have found that the accuracy of the numbers 0.400 and 0.6137, previously obtained for repression in general, and for repression exercised in particular against the accused who have received a superior education, is in the ratio of 0.0870 to 0.0075, or as 11 to 1.