

TENTH EPOCH.

Future Progress of Mankind.

IF man can predict, almost with certainty, those appearances of which he understands the laws; if, even when the laws are unknown to him, experience of the past enables him to foresee, with considerable probability, future appearances; why should we suppose it a chimerical undertaking to delineate, with some degree of truth, the picture of the future destiny of mankind from the results of its history? The only foundation of faith in the natural sciences is the principle, that the general laws, known or unknown, which regulate the phenomena of the universe, are regular and constant; and why should this principle, applicable to the other operations of nature, be less true when applied to the development of the intellectual and moral faculties of man? In short, as opinions formed from experience, relative to the same class of objects, are the only rule by which men of soundest understanding

standing are governed in their conduct, why should the philosopher be proscribed from supporting his conjectures upon a similar basis, provided he attribute to them no greater certainty than the number, the consistency, and the accuracy of actual observations shall authorise?

Our hopes, as to the future condition of the human species, may be reduced to three points: the destruction of inequality between different nations; the progress of equality in one and the same nation; and lastly, the real improvement of man.

Will not every nation one day arrive at the state of civilization attained by those people who are most enlightened, most free, most exempt from prejudices, as the French, for instance, and the Anglo-Americans? Will not the slavery of countries subjected to kings, the barbarity of African tribes, and the ignorance of savages gradually vanish? Is there upon the face of the globe a single spot the inhabitants of which are condemned by nature never to enjoy liberty, never to exercise their reason?

Does the difference of knowledge, of means, and of wealth, observable hitherto in all

all civilized nations, between the classes into which the people constituting those nations are divided; does that inequality, which the earliest progress of society has augmented, or, to speak more properly, produced, belong to civilization itself, or to the imperfections of the social order? Must it not continually weaken, in order to give place to that actual equality, the chief end of the social art, which, diminishing even the effects of the natural difference of the faculties, leaves no other inequality subsisting but what is useful to the interest of all, because it will favour civilization, instruction, and industry, without drawing after it either dependence, humiliation or poverty? In a word, will not men be continually verging towards that state, in which all will possess the requisite knowledge for conducting themselves in the common affairs of life by their own reason, and of maintaining that reason uncontaminated by prejudices; in which they will understand their rights, and exercise them according to their opinion and their conscience; in which all will be able, by the development of their faculties, to procure the certain means of providing for their wants; lastly,

lastly, in which folly and wretchedness will be accidents, happening only now and then, and not the habitual lot of a considerable portion of society?

In fine, may it not be expected that the human race will be meliorated by new discoveries in the sciences and the arts, and, as an unavoidable consequence, in the means of individual and general prosperity; by farther progress in the principles of conduct, and in moral practice; and lastly, by the real improvement of our faculties, moral, intellectual and physical, which may be the result either of the improvement of the instruments which increase the power and direct the exercise of those faculties, or of the improvement of our natural organization itself?

In examining the three questions we have enumerated, we shall find the strongest reasons to believe, from past experience, from observation of the progress which the sciences and civilization have hitherto made, and from the analysis of the march of the human understanding, and the development of its faculties, that nature has fixed no limits to our hopes.

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If we take a survey of the existing state of the globe, we shall perceive, in the first place, that in Europe the principles of the French constitution are those of every enlightened mind. We shall perceive that they are too widely disseminated, and too openly professed, for the efforts of tyrants and priests to prevent them from penetrating by degrees into the miserable cottages of their slaves, where they will soon revive those embers of good sense, and rouse that silent indignation which the habit of suffering and terror have failed totally to extinguish in the minds of the oppressed.

If we next look at the different nations, we shall observe in each, particular obstacles opposing, or certain dispositions favouring this revolution. We shall distinguish some in which it will be effected, perhaps slowly, by the wisdom of the respective governments; and others in which, rendered violent by resistance, the governments themselves will necessarily be involved in its terrible and rapid motions.

Can it be supposed that either the wisdom or the senseless feuds of European nations,
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co-operating with the slow but certain effects of the progress of their colonies, will not shortly produce the independence of the entire new world; and that then, European population, lending its aid, will fail to civilize or cause to disappear, even without conquest, those savage nations still occupying these immense tracts of country?

Run through the history of our projects and establishments in Africa or in Asia, and you will see our monopolies, our treachery, our sanguinary contempt for men of a different complexion or a different creed, and the proselyting fury or the intrigues of our priests, destroying that sentiment of respect and benevolence which the superiority of our information and the advantages of our commerce had at first obtained.

But the period is doubtless approaching, when, no longer exhibiting to the view of these people corruptors only or tyrants, we shall become to them instruments of benefit, and the generous champions of their redemption from bondage.

The cultivation of the sugar-cane, which is now establishing itself in Africa, will put

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an end to the shameful robbery by which, for two centuries, that country has been depopulated and depraved.

Already, in Great Britain, some friends of humanity have set the example; and if its Machiavelian government, forced to respect public reason, has not dared to oppose this measure, what may we not expect from the same spirit, when, after the reform of an abject and venal constitution, it shall become worthy of a humane and generous people? Will not France be eager to imitate enterprises which the philanthropy and the true interest of Europe will equally have dictated? Spices are already introduced into the French islands, Guiana, and some English settlements; and we shall soon witness the fall of that monopoly which the Dutch have supported by such a complication of perfidy, of oppression, and of crimes. The people of Europe will learn in time that exclusive and chartered companies are but a tax upon the respective nation, granted for the purpose of placing a new instrument in the hands of its government for the maintenance of tyranny.

Then will the inhabitants of the European
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quarter of the world, satisfied with an unrestricted commerce, too enlightened as to their own rights to sport with the rights of others, respect that independence which they have hitherto violated with such audacity. Then will their establishments, instead of being filled by the creatures of power, who, availing themselves of a place or a privilege, hasten, by rapine and perfidy, to amass wealth, in order to purchase, on their return, honours and titles, be peopled with industrious men, seeking in those happy climates that ease and comfort which in their native country eluded their pursuit. There will they be retained by liberty, ambition having lost its allurements; and those settlements of robbers will then become colonies of citizens, by whom will be planted in Africa and Asia the principles and example of the freedom, reason, and illumination of Europe. To those monks also, who inculcate on the natives of the countries in question the most shameful superstitions only, and who excite disgust by menacing them with a new tyranny, will succeed men of integrity and benevolence, anxious to spread among these people truths useful to their happiness, and

to enlighten them upon their interests as well as their rights: for the love of truth is also a passion; and when it shall have at home no gross prejudices to combat, no degrading errors to dissipate, it will naturally extend its regards, and convey its efforts to remote and foreign climes.

These immense countries will afford ample scope for the gratification of this passion. In one place will be found a numerous people, who, to arrive at civilization, appear only to wait till we shall furnish them with the means; and who, treated as brothers by Europeans, would instantly become their friends and disciples. In another will be seen nations crouching under the yoke of sacred despots or stupid conquerors, and who, for so many ages, have looked for some friendly hand to deliver them: while a third will exhibit either tribes nearly savage, excluded from the benefits of superior civilization by the severity of their climate, which deters those who might otherwise be disposed to communicate these benefits from making the attempt; or else conquering hordes, knowing no law but force, no trade but robbery. The
advances

advances of these two last classes will be more flow, and accompanied with more frequent storms; it may even happen that, reduced in numbers in proportion as they see themselves repelled by civilized nations, they will in the end wholly disappear, or their scanty remains become blended with their neighbours.

We might shew that these events will be the inevitable consequence not only of the progress of Europe, but of that freedom which the republic of France, as well as of America, have it in their power, and feel it to be their interest, to restore to the commerce of Africa and Asia; and that they must also necessarily result alike, whether from the new policy of European nations, or their obstinate adherence to mercantile prejudices.

A single combination, a new invasion of Asia by the Tartars, might be sufficient to frustrate this revolution; but it may be shewn that such combination is henceforth impossible to be effected. Meanwhile every thing seems to be preparing the speedy downfall of the religions of the East, which, partaking of the abjectness of their ministers, left almost exclusively to the people, and, in the major-

rity of countries, considered by powerful men as political institutions only, no longer threaten to retain human reason in a state of hopeless bondage, and in the eternal shackles of infancy.

The march of these people will be less slow and more sure than ours has been, because they will derive from us that light which we have been obliged to discover, and because for them to acquire the simple truths and infallible methods which we have obtained after long wandering in the mazes of error, it will be sufficient to seize upon their developements and proofs in our discourses and publications. If the progress of the Greeks was lost upon other nations, it was for want of a communication between the people; and to the tyrannical domination of the Romans must the whole blame be ascribed. But, when mutual wants shall have drawn closer the intercourse and ties of all mankind; when the most powerful nations shall have established into political principles equality between societies as between individuals, and respect for the independence of feeble states, as well as compassion for ignorance and wretched-

wretchedness; when to the maxims which bear heavily upon the spring of the human faculties, those shall succeed which favour their action and energy, will there still be reason to fear that the globe will contain spaces inaccessible to knowledge, or that the pride of despotism will be able to oppose barriers to truth that will long be insurmountable?

Then will arrive the moment in which the sun will observe in its course free nations only, acknowledging no other master than their reason; in which tyrants and slaves, priests and their stupid or hypocritical instruments, will no longer exist but in history and upon the stage; in which our only concern will be to lament their past victims and dupes, and, by the recollection of their horrid enormities, to exercise a vigilant circumspection, that we may be able instantly to recognise and effectually to stifle by the force of reason, the seeds of superstition and tyranny, should they ever presume again to make their appearance upon the earth.

In tracing the history of societies we have had occasion to remark, that there frequently exists a considerable distinction between the

rights which the law acknowledges in the citizens of a state, and those which they really enjoy; between the equality established by political institutions, and that which takes place between the individual members: and that to this disproportion was chiefly owing the destruction of liberty in the ancient republics, the storms which they had to encounter, and the weakness that surrendered them into the power of foreign tyrants.

Three principal causes may be assigned for these distinctions: inequality of wealth, inequality of condition between him whose resources of subsistence are secured to himself and descendable to his family, and him whose resources are annihilated with the termination of his life, or rather of that part of his life in which he is capable of labour; and lastly, inequality of instruction.

It will therefore behove us to shew, that these three kinds of real inequality must continually diminish; but without becoming absolutely extinct, since they have natural and necessary causes, which it would be absurd as well as dangerous to think of destroying; nor can we attempt even to destroy entirely their effects,

effects, without opening at the same time more fruitful sources of inequality, and giving to the rights of man a more direct and more fatal blow.

It is easy to prove that fortunes naturally tend to equality, and that their extreme disproportion either could not exist, or would quickly cease, if positive law had not introduced factitious means of amassing and perpetuating them; if an entire freedom of commerce and industry were brought forward to supersede the advantages which prohibitory laws and fiscal rights necessarily give to the rich over the poor; if duties upon every sort of transfer and convention, if prohibitions to certain kinds, and the tedious and expensive formalities prescribed to other kinds; if the uncertainty and expence attending their execution had not pallied the efforts of the poor, and swallowed up their little accumulations; if political institutions had not laid certain prolific sources of opulence open to a few, and shut them against the many; if avarice, and the other prejudices incident to an advanced age, did not preside over marriages; in fine, if the simplicity

city of our manners and the wisdom of our institutions were calculated to prevent riches from operating as the means of gratifying vanity or ambition, at the same time that an ill-judged austeritey, by forbidding us to render them a means of costly pleasures, should not force us to preserve the wealth that had once been accumulated.

Let us compare, in the enlightened nations of Europe, the actual population with the extent of territory ; let us observe, amidst the spectacle of their culture and their industry, the way in which labour and the means of subsistence are distributed, and we shall see that it will be impossible to maintain these means in the same extent, and of consequence to maintain the same mass of population, if any considerable number of individuals cease to have, as now, nothing but their industry, and the pittance necessary to set it at work, or to render its profit equal to the supplying their own wants and those of their family. But neither this industry, nor the scanty reserve we have mentioned, can be perpetuated, except so long as the life and health of each head of a family is perpetuated. Their little fortune

tune therefore is at best an annuity, but in reality with features of precariousness that an annuity wants : and from hence results a most important difference between this class of society and the class of men whose resources consist either of a landed income, or the interest of a capital, which depends little upon personal industry, and is therefore not subject to similar risks.

There exists then a necessary cause of inequality, of dependence, and even of penury, which menaces without ceasing the most numerous and active class of our societies.

This inequality, however, may be in great measure destroyed, by setting chance against chance, in securing to him who attains old age a support, arising from his savings, but augmented by those of other persons, who, making a similar addition to a common stock, may happen to die before they shall have occasion to recur to it ; in procuring, by a like regulation, an equal resource for women who may lose their husbands, or children who may lose their father ; lastly, in preparing for those youths, who arrive at an age to be capable of working for themselves, and of giving birth

birth to a new family, the benefit of a capital sufficient to employ their industry, and increased at the expence of those whom premature death may cut off before they arrive at that period. To the application of mathematics to the probabilities of life and the interest of money, are we indebted for the hint of these means, already employed with some degree of success, though they have not been carried to such extent, or employed in such variety of forms, as would render them truly beneficial, not merely to a few families, but to the whole mass of society, which would thereby be relieved from that periodical ruin observable in a number of families, the ever-flowing source of corruption and depravity.

These establishments, which may be formed in the name of the social power, and become one of its greatest benefits, might also be the result of individual associations, which may be instituted without danger, when the principles by which the establishments ought to be organised, shall have become more popular, and the errors, by which a great number of such associations have been destroyed, shall cease to be an object of apprehension.

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We may enumerate other means of securing the equality in question, either by preventing credit from continuing to be a privilege exclusively attached to large fortunes, without at the same time placing it upon a less solid foundation; or by rendering the progress of industry and the activity of commerce more independent of the existence of great capitalists: and for these resources also we shall be indebted to the science of calculation.

The equality of instruction we can hope to attain, and with which we ought to be satisfied, is that which excludes every species of dependence, whether forced or voluntary. We may exhibit, in the actual state of human knowledge, the easy means by which this end may be attained even for those who can devote to study but a few years of infancy, and, in subsequent life, only some occasional hours of leisure. We might shew, that by a happy choice of the subjects to be taught, and of the mode of inculcating them, the entire mass of a people may be instructed in every thing necessary for the purposes of domestic economy; for the transaction of their affairs; for the free developement of their industry and their
faculties;

faculties ; for the knowledge, exercise and protection of their rights ; for a sense of their duties, and the power of discharging them ; for the capacity of judging both their own actions, and the actions of others, by their own understanding ; for the acquisition of all the delicate or dignified sentiments that are an honour to humanity ; for freeing themselves from a blind confidence in those to whom they may entrust the care of their interests, and the security of their rights ; for chusing and watching over them, so as no longer to be the dupes of those popular errors that torment and way-lay the life of man with superstitious fears and chimerical hopes ; for defending themselves against prejudices by the sole energy of reason ; in fine, for escaping from the delusions of imposture, which would spread snares for their fortune, their health, their freedom of opinion and of conscience, under the pretext of enriching, of healing, and of saving them.

The inhabitants of the same country being then no longer distinguished among themselves by the alternate use of a refined or a vulgar language ; being equally governed by their own
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understandings ; being no more confined to the mechanical knowledge of the processes of the arts, and the mere routine of a profession ; no more dependent in the most trifling affairs, and for the slightest information, upon men of skill, who, by a necessary ascendancy, controul and govern, a real equality must be the result ; since the difference of talents and information can no longer place a barrier between men whose sentiments, ideas, and phraseology are capable of being mutually understood, of whom the one part may desire to be instructed, but cannot need to be guided by the other ; of whom the one part may delegate to the other the office of a rational government, but cannot be forced to regard them with blind and unlimited confidence.

Then it is that this superiority will become an advantage even for those who do not partake of it, since it will exist not as their enemy, but as their friend. The natural difference of faculties between men whose understandings have not been cultivated, produces, even among savages, empirics and dupes, the one skilled in delusion, the others

easy to be deceived: the same difference will doubtless exist among a people where instruction shall be truly general; but it will be here between men of exalted understandings and men of sound minds, who can admire the radiance of knowledge, without suffering themselves to be dazzled by it; between talents and genius on the one hand, and on the other the good sense that knows how to appreciate and enjoy them: and should this difference be even greater in the latter case, comparing the force and extent of the faculties only, still would the effects of it not be the less imperceptible in the relations of men with each other, in whatever is interesting to their independence or their happiness.

The different causes of equality we have enumerated do not act distinctly and apart; they unite, they incorporate, they support one another; and from their combined influence results an action proportionably forcible, sure, and constant. If instruction become more equal, industry thence acquires greater equality, and from industry the effect is communicated to fortunes; and equality of fortunes necessarily contributes to that of instruction,

tion, while equality of nations, like that established between individuals, have also a mutual operation upon each other.

In fine, instruction, properly directed, corrects the natural inequality of the faculties, instead of strengthening it, in like manner as good laws remedy the natural inequality of the means of subsistence; or as, in societies whose institutions shall have effected this equality, liberty, though subjected to a regular government, will be more extensive, more complete, than in the independence of savage life. Then has the social art accomplished its end, that of securing and extending for all the enjoyment of the common rights which impartial nature has bequeathed to all.

The advantages that must result from the state of improvement, of which I have proved we may almost entertain the certain hope, can have no limit but the absolute perfection of the human species, since, in proportion as different kinds of equality shall be established as to the various means of providing for our wants, as to a more universal instruction, and a more entire liberty, the more real will be this equality, and the nearer will it approach towards

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embracing every thing truly important to the happiness of mankind.

It is then by examining the progression and the laws of this perfection, that we can alone arrive at the knowledge of the extent or boundary of our hopes.

It has never yet been supposed, that all the facts of nature, and all the means of acquiring precision in the computation and analysis of those facts, and all the connections of objects with each other, and all the possible combinations of ideas, can be exhausted by the human mind. The mere relations of magnitude, the combinations, quantity and extent of this idea alone, form already a system too immense for the mind of man ever to grasp the whole of it; a portion, more vast than that which he may have penetrated, will always remain unknown to him. It has, however, been imagined, that, as man can know a part only of the objects which the nature of his intelligence permits him to investigate, he must at length reach the point at which, the number and complication of those he already knows having absorbed all his powers, farther progress will become absolutely impossible.

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But, in proportion as facts are multiplied, man learns to class them, and reduce them to more general facts, at the same time that the instruments and methods for observing them, and registering them with exactness, acquire a new precision: in proportion as relations more multifarious between a greater number of objects are discovered, man continues to reduce them to relations of a wider denomination, to express them with greater simplicity, and to present them in a way which may enable a given strength of mind, with a given quantity of attention, to take in a greater number than before: in proportion as the understanding embraces more complicated combinations, a simple mode of announcing these combinations renders them more easy to be treated. Hence it follows that truths, the discovery of which was accompanied with the most laborious efforts, and which at first could not be comprehended but by men of the severest attention, will after a time be unfolded and proved in methods that are not above the efforts of an ordinary capacity. And thus should the methods that led to new combinations be exhausted, should

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their applications to questions, still unresolved, demand exertions greater than the time or the powers of the learned can bestow, more general methods, means more simple would soon come to their aid, and open a farther career to genius. The energy, the real extent of the human intellect may remain the same; but the instruments which it can employ will be multiplied and improved; but the language which fixes and determines the ideas will acquire more precision and compass; and it will not be here, as in the science of mechanics, where, to increase the force, we must diminish the velocity; on the contrary the methods by which genius will arrive at the discovery of new truths, augment at once both the force and the rapidity of its operations.

In a word, these changes being themselves the necessary consequences of additional progress in the knowledge of truths of detail, and the cause which produces a demand for new resources, producing at the same time the means of supplying them, it follows that the actual mass of truths appertaining to the sciences of observation, calculation and experiment

periment, may be perpetually augmented, and that without supposing the faculties of man to possess a force and activity, and a scope of action greater than before.

By applying these general reflections to the different sciences, we might exhibit, respecting each, examples of this progressive improvement, which would remove all possibility of doubt as to the certainty of the further improvement that may be expected. We might indicate particularly in those which prejudice considers as nearest to being exhausted, the marks of an almost certain and early advance. We might illustrate the extent, the precision, the unity which must be added to the system comprehending all human knowledge, by a more general and philosophical application of the science of calculation to the individual branches of which that system is composed. We might shew how favourable to our hopes a more universal instruction would prove, by which a greater number of individuals would acquire the elementary knowledge that might inspire them with a taste for a particular kind of study; and how much these hopes would be further heightened

if this application to study were to be rendered still more extensive by a more general ease of circumstances. At present, in the most enlightened countries, scarcely do one in fifty of those whom nature has blessed with talents receive the necessary instruction for the development of them: how different would be the proportion in the case we are supposing? and, of consequence, how different the number of men destined to extend the horizon of the sciences?

We might shew how much this equality of instruction, joined to the national equality we have supposed to take place, would accelerate those sciences, the advancement of which depends upon observations repeated in a greater number of instances, and extending over a larger portion of territory; how much benefit would be derived therefrom to mineralogy, botany, zoology, and the doctrine of meteors; in short, how infinite the difference between the feeble means hitherto enjoyed by these sciences, and which yet have led to useful and important truths, and the magnitude of those which man would then have it in his power to employ.

Lastly,

Lastly, we might prove that, from the advantage of being cultivated by a greater number of persons, even the progress of those sciences, in which discoveries are the fruit of individual meditation, would, also, be considerably advanced by means of minuter improvements, not requiring the strength of intellect, necessary for inventions, but that present themselves to the reflection of the least profound understandings.

If we pass to the progress of the arts, those arts particularly the theory of which depends on these very same sciences, we shall find that it can have no inferior limits; that their processes are susceptible of the same improvement, the same simplifications, as the scientific methods; that instruments, machines, looms, will add every day to the capabilities and skill of man—will augment at once the excellence and precision of his works, while they will diminish the time and labour necessary for executing them; and that then will disappear the obstacles that still oppose themselves to the progress in question, accidents which will be foreseen and prevented; and, lastly, the unhealthiness at present at-

tendant upon certain operations, habits and climates.

A smaller portion of ground will then be made to produce a portion of provisions of higher value or greater utility; a greater quantity of enjoyment will be procured at a smaller expence of consumption; the same manufactured or artificial commodity will be produced at a smaller expence of raw materials, or will be stronger and more durable; every soil will be appropriated to productions which will satisfy a greater number of wants with the least labour, and taken in the smallest quantities. Thus the means of health and frugality will be encreased, together with the instruments in the arts of production, of curing commodities and manufacturing their produce, without demanding the sacrifice of one enjoyment by the consumer.

Thus, not only the same species of ground will nourish a greater number of individuals, but each individual, with a less quantity of labour, will labour more successfully, and be surrounded with greater conveniences.

It may, however, be demanded, whether, amidst this improvement in industry and happiness,

happiness, where the wants and faculties of men will continually become better proportioned, each successive generation possess more various stores, and of consequence in each generation the number of individuals be greatly increased; it may, I say, be demanded, whether these principles of improvement and increase may not, by their continual operation, ultimately lead to degeneracy and destruction? Whether the number of inhabitants in the universe at length exceeding the means of existence, there will not result a continual decay of happiness and population, and a progress towards barbarism, or at least a sort of oscillation between good and evil? Will not this oscillation, in societies arrived at this epoch, be a perennial source of periodical calamity and distress? In a word, do not these considerations point out the limit at which all farther improvement will become impossible, and consequently the perfectibility of man arrive at a period which in the immensity of ages it may attain, but which it can never pass?

There is, doubtless, no individual that does not perceive how very remote from us will be

be this period : but must it one day arrive ? It is equally impossible to pronounce on either side respecting an event, which can only be realized at an epoch when the human species will necessarily have acquired a degree of knowledge, of which our short-sighted understandings can scarcely form an idea. And who shall presume to foretel to what perfection the art of converting the elements of life into substances fitted for our use, may, in a progression of ages, be brought ?

But supposing the affirmative, supposing it actually to take place, there would result from it nothing alarming, either to the happiness of the human race, or its indefinite perfectibility ; if we consider, that prior to this period the progress of reason will have walked hand in hand with that of the sciences ; that the absurd prejudices of superstition will have ceased to infuse into morality a harshness that corrupts and degrades, instead of purifying and exalting it ; that men will then know, that the duties they may be under relative to propagation will consist not in the question of giving *existence* to a greater number of beings, but *happiness* ; will have for
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their object, the general welfare of the human species ; of the society in which they live ; of the family to which they are attached ; and not the puerile idea of encumbering the earth with useless and wretched mortals. Accordingly, there might then be a limit to the possible mass of provision, and of consequence to the greatest possible population, without that premature destruction, so contrary to nature and to social prosperity, of a portion of the beings who may have received life, being the result of those limits.

As the discovery, or rather the accurate solution of the first principles of metaphysics, morals, and politics, is still recent ; and as it has been preceded by the knowledge of a considerable number of truths of detail, the prejudice, that they have thereby arrived at their highest point of improvement, becomes easily established in the mind ; and men suppose that nothing remains to be done, because there are no longer any gross errors to destroy, or fundamental truths to establish.

But it requires little penetration to perceive how imperfect is still the development of the intellectual and moral faculties of
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man; how much farther the sphere of his duties, including therein the influence of his actions upon the welfare of his fellow-creatures and of the society to which he belongs, may be extended by a more fixed, a more profound and more accurate observation of that influence; how many questions still remain to be solved, how many social ties to be examined, before we can ascertain the precise catalogue of the individual rights of man, as well as of the rights which the social state confers upon the whole community with regard to each member. Have we even ascertained with any precision the limits of these rights, whether as they exist between different societies, or in any single society, over its members, in cases of division and hostility; or, in fine, the rights of individuals, their spontaneous unions in the case of a primitive formation, or their separations when separation becomes necessary?

If we pass on to the theory which ought to direct the application of these principles, and serve as the basis of the social art, do we not see the necessity of acquiring an exactness of which first truths, from their general nature,

are not susceptible? Are we so far advanced as to consider justice, or a proved and acknowledged utility, and not vague, uncertain, and arbitrary views of pretended political advantages, as the foundation of all institutions of law? Among the variety, almost infinite, of possible systems, in which the general principles of equality and natural rights should be respected, have we yet fixed upon the precise rules of ascertaining with certainty those which best secure the preservation of these rights, which afford the freest scope for their exercise and enjoyment, which promote most effectually the peace and welfare of individuals, and the strength, repose, and prosperity of nations?

The application of the arithmetic of combinations and probabilities to these sciences, promises an improvement by so much the more considerable, as it is the only means of giving to their results an almost mathematical precision, and of appreciating their degree of certainty or probability. The facts upon which these results are built may, indeed, without calculation, and by a glance only, lead to some general truths; teach us whether the

the effects produced by such a cause have been favourable or the reverse: but if these facts have neither been counted nor estimated; if these effects have not been the object of an exact admeasurement, we cannot judge of the quantity of good or evil they contain: if the good or evil nearly balance each other, nay, if the difference be not considerable, we cannot pronounce with certainty to which side the balance inclines. Without the application of this arithmetic, it would be almost impossible to chuse, with sound reason, between two combinations proposing to themselves the same end, when their advantages are not distinguishable by any considerable difference. In fine, without this alliance, these sciences would remain for ever gross and narrow, for want of instruments of sufficient polish to lay hold of the subtilty of truth—for want of machines sufficiently accurate to sound the bottom of the well where it conceals its wealth.

Meanwhile this application, notwithstanding the happy efforts of certain geometers; is still, if I may so speak, in its first rudiments; and to the following generations must it

it open a source of intelligence inexhaustible as calculation itself, or as the combinations, analogies, and facts that may be brought within the sphere of its operations.

There is another species of progress, appertaining to the sciences in question, equally important; I mean, the improvement of their language, at present so vague and so obscure. To this improvement must they owe the advantage of becoming popular, even in their first elements. Genius can triumph over these inaccuracies, as over other obstacles; it can recognise the features of truth, in spite of the mask that conceals or disfigures them. But how is the man who can devote but a few leisure moments to instruction to do this? how is he to acquire and retain the most simple truths, if they be disguised by an inaccurate language? The fewer ideas he is able to collect and combine, the more requisite it is that they be just and precise. He has no fund of truths stored up in his mind, by which to guard himself against error; nor is his understanding so strengthened and refined by long exercise, that he can catch those feeble rays of light which
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individual with the common interest of all? What is the end of the social art, but to destroy the opposition between these two apparently jarring sentiments? And will not the constitution and laws of that country best accord with the intentions of reason and nature where the practice of virtue shall be least difficult, and the temptations to deviate from her paths least numerous and least powerful.

What vicious habit can be mentioned, what practice contrary to good faith, what crime even, the origin and first cause of which may not be traced in the legislation, institutions, and prejudices of the country in which we observe such habit, such practice, or such crime to be committed?

In short, does not the well-being, the prosperity, resulting from the progress that will be made by the useful arts, in consequence of their being founded upon a sound theory, resulting, also, from an improved legislation, built upon the truths of the political sciences, naturally dispose men to humanity, to benevolence, and to justice? Do not all the observations, in fine, which we proposed to develop in this work prove, that the moral goodness of man, the necessary consequence
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of his organization, is, like all his other faculties, susceptible of an indefinite improvement? and that nature has connected, by a chain which cannot be broken, truth, happiness, and virtue?

Among those causes of human improvement that are of most importance to the general welfare, must be included, the total annihilation of the prejudices which have established between the sexes an inequality of rights, fatal even to the party which it favours. In vain might we search for motives by which to justify this principle, in difference of physical organization, of intellect, or of moral sensibility. It had at first no other origin but abuse of strength, and all the attempts which have since been made to support it are idle sophisms.

And here we may observe, how much the abolition of the usages authorized by this prejudice, and of the laws which it has dictated, would tend to augment the happiness of families; to render common the virtues of domestic life, the fountain-head of all the others; to favour instruction, and, especially, to make it truly general, either because it would be extended to both sexes

with greater equality, or because it cannot become general, even to men, without the concurrence of the mothers of families. Would not this homage, so long in paying, to the divinities of equity and good sense, put an end to a too fertile principle of injustice, cruelty, and crime, by superseding the opposition hitherto maintained between that natural propensity, which is, of all others, the most imperious, and the most difficult to subdue, and the interests of man, or the duties of society? Would it not produce, what has hitherto been a mere chimera, national manners of a nature mild and pure, formed, not by imperious privations, by hypocritical appearances, by reserves imposed by the fear of shame or religious terrors, but by habits freely contracted, inspired by nature and avowed by reason?

The people being more enlightened, and having resumed the right of disposing for themselves of their blood and their treasure, will learn by degrees to regard war as the most dreadful of all calamities, the most terrible of all crimes. The first wars that will be superseded, will be those into which the usurpers of sovereignty have hitherto drawn
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their subjects for the maintenance of rights pretendedly hereditary.

Nations will know, that they cannot become conquerors without losing their freedom; that perpetual confederations are the only means of maintaining their independence; that their object should be security, and not power. By degrees commercial prejudices will die away; a false mercantile interest will lose the terrible power of imbuing the earth with blood, and of ruining nations under the idea of enriching them. As the people of different countries will at last be drawn into closer intimacy, by the principles of politics and morality, as each, for its own advantage, will invite foreigners to an equal participation of the benefits which it may have derived either from nature or its own industry, all the causes which produce, envenom, and perpetuate national animosities, will one by one disappear, and will no more furnish to warlike insanity either fuel or pretext.

Institutions, better combined than those projects of perpetual peace which have occupied the leisure and consoled the heart of certain philosophers, will accelerate the progress

gress of this fraternity of nations ; and wars, like assassinations, will be ranked in the number of those daring atrocities, humiliating and loathsome to nature ; and which fix upon the country or the age whose annals are stained with them, an indelible opprobrium.

In speaking of the fine arts in Greece, in Italy, and in France, we have observed, that it is necessary to distinguish, in their productions, what really belongs to the progress of the art, and what is due only to the talent of the artist. And here let us enquire what progress may still be expected, whether, in consequence of the advancement of philosophy and the sciences, or from an additional store of more judicious and profound observations relative to the object, the effects and the means of these arts themselves ; or, lastly, from the removal of the prejudices that have contracted their sphere, and that still retain them in the shackles of authority, from which the sciences and philosophy have at length freed themselves. Let us ask, whether, as has frequently been supposed, these means may be considered as exhausted ? or, if not exhausted, whether, because the most sublime and pathetic beauties have been seized ;
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the most happy subjects treated ; the most simple and striking combinations employed ; the most prominent and general characters exhibited ; the most energetic passions, their true expressions and genuine features delineated ; the most commanding truths, the most brilliant images displayed ; that, therefore, the arts are condemned to an eternal and monotonous imitation of their first models ?

We shall perceive that this opinion is merely a prejudice, derived from the habit which exists among men of letters and artists of appreciating the merits of men, instead of giving themselves up to the enjoyment to be received from their works. The second-hand pleasure which arises from comparing the productions of different ages and countries, and from contemplating the energy and success of the efforts of genius, will perhaps be lost ; but, in the mean time, the pleasure arising from the productions considered in themselves, and flowing from their absolute perfection, need not be less lively, though the improvement of the author may less excite our astonishment. In proportion as excellent productions shall multiply, every successive generation of men will direct its at-

tention to those which are most perfect, and the rest will insensibly fall into oblivion; while the more simple and palpable traits, which were seized upon by those who first entered the field of invention, will not the less exist for our posterity, though they shall be found only in the latest productions.

The progress of the sciences secures the progress of the art of instruction, which again accelerates in its turn that of the sciences; and this reciprocal influence, the action of which is incessantly increased, must be ranked in the number of the most prolific and powerful causes of the improvement of the human race. At present, a young man, upon finishing his studies and quitting our schools, may know more of the principles of mathematics than Newton acquired by profound study, or discovered by the force of his genius, and may exercise the instrument of calculation with a readiness which at that period was unknown. The same observation, with certain restrictions, may be applied to all the sciences. In proportion as each shall advance, the means of compressing, within a smaller circle, the proofs of a greater number of truths, and of facilitating their comprehension,

will equally advance. Thus, notwithstanding future degrees of progress, not only will men of equal genius find themselves, at the same period of life, upon a level with the actual state of science, but, respecting every generation, what may be acquired in a given space of time, by the same strength of intellect and the same degree of attention, will necessarily increase, and the elementary part of each science, that part which every man may attain, becoming more and more extended, will include, in a manner more complete, the knowledge necessary for the direction of every man in the common occurrences of life, and for the free and independent exercise of his reason.

In the political sciences there is a description of truths, which, particularly in free countries (that is, in all countries in certain generations), can only be useful when generally known and avowed. Thus, the influence of these sciences upon the freedom and prosperity of nations, must, in some sort, be measured by the number of those truths that, in consequence of elementary instruction, shall pervade the general mind: and thus, as the growing progress of this
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elementary instruction is connected with the necessary progress of the sciences, we may expect a melioration in the doctrines of the human race which may be regarded as indefinite, since it can have no other limits than those of the two species of progress on which it depends.

We have still two other means of general application to consider, and which must influence at once both the improvement of the art of instruction and that of the sciences. One is a more extensive and more perfect adoption of what may be called technical methods; the other, the institution of an universal language.

By technical methods I understand, the art of uniting a great number of objects in an arranged and systematic order, by which we may be enabled to perceive at a glance their bearings and connections, seize in an instant their combinations, and form from them the more readily new combinations.

Let us develop the principles, let us examine the utility of this art, as yet in its infancy, and we shall find that, when improved and perfected, we might derive from it, either the advantage of possessing within
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the narrow compass of a picture, what it would be often difficult for volumes to explain to us so readily and so well; or the means, still more valuable, of presenting isolated facts in a disposition and view best calculated to give us their general results. We shall perceive how, by means of a small number of these pictures or tables, the use of which may be easily learned, men who have not been able to appropriate such useful details and elementary knowledge as may apply to the purposes of common life, may turn to them at the shortest notice; and how elementary knowledge itself, in all those sciences where this knowledge is founded either upon a regular code of truths or a series of observations and experiments, may hereby be facilitated.

An universal language is that which expresses by signs, either the direct objects, or those well-defined collections constituted of simple and general ideas, which are to be found or may be introduced equally in the understandings of all mankind; or, lastly, the general relations of these ideas, the operations of the human mind, the operations peculiar to any science, and the mode of process in the arts. Thus, such persons as
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shall have become masters of these signs, the method of combining and the rules for constructing them, will understand what is written in this language, and will read it with similar facility in the language of their own country, whatever it may happen to be.

It is apparent, that this language might be employed to explain either the theory of a science or the rules of an art; to give an account of a new experiment or a new observation, the acquisition of a scientific truth, the invention of a method, or the discovery of a process; and that, like algebra, when obliged to make use of new signs, those already known would afford the means of ascertaining their value.

A language like this has not the inconvenience of a scientific idiom, different from the vernacular tongue. We have before observed, that the use of such an idiom necessarily divides societies into two extremely unequal classes; the one composed of men, understanding the language, and, therefore, in possession of the key to the sciences; the other of those who, incapable of learning it, find themselves reduced almost to an absolute impossibility of acquiring knowledge. On
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the contrary, the universal language we are supposing, might be learned, like the language of algebra, with the science itself; the sign might be known at the same instant with the object, the idea, or the operation which it expresses. He who, having attained the elements of a science, should wish to prosecute farther his enquiries, would find in books, not only truths that he could understand, by means of those signs, of which he already knows the value, but the explanation of the new signs of which he has need in order to ascend to higher truths.

It might be shown that the formation of such a language, if confined to the expressing of simple and precise propositions, like those which form the system of a science, or the practice of an art, would be the reverse of chimerical; that its execution, even at present, would be extremely practicable as to a great number of objects; and that the chief obstacle that would stand in the way of extending it to others, would be the humiliating necessity of acknowledging how few precise ideas, and accurately defined notions, understood exactly in the same sense by every mind, we really possess.

It might be shown that this language, improving every day, acquiring incessantly greater extent, would be the means of giving to every object that comes within the reach of human intelligence, a rigour, and precision, that would facilitate the knowledge of truth, and render error almost impossible. Then would the march of every science be as infallible as that of the mathematics, and the propositions of every system acquire, as far as nature will admit, geometrical demonstration and certainty.

All the causes which contribute to the improvement of the human species, all the means we have enumerated that insure its progress, must, from their very nature, exercise an influence always active, and acquire an extent for ever increasing. The proofs of this have been exhibited, and from their development in the work itself they will derive additional force: accordingly we may already conclude, that the perfectibility of man is indefinite. Meanwhile we have hitherto considered him as possessing only the same natural faculties, as endowed with the same organization. How much greater would be the certainty, how much wider the compass of our hopes, could
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we prove that these natural faculties themselves, that this very organization, are also susceptible of melioration? And this is the last question we shall examine.

The organic perfectibility or deterioration of the classes of the vegetable, or species of the animal kingdom, may be regarded as one of the general laws of nature.

This law extends itself to the human race; and it cannot be doubted that the progress of the sanative art, that the use of more wholesome food and more comfortable habitations, that a mode of life which shall develop the physical powers by exercise, without at the same time impairing them by excess; in fine, that the destruction of the two most active causes of deterioration, penury and wretchedness on the one hand, and enormous wealth on the other, must necessarily tend to prolong the common duration of man's existence, and secure him a more constant health and a more robust constitution. It is manifest that the improvement of the practice of medicine, become more efficacious in consequence of the progress of reason and the social order, must in the end put a period to transmissible or contagious disorders, as well to those general maladies resulting from climate, aliments, and the
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nature of certain occupations. Nor would it be difficult to prove that this hope might be extended to almost every other malady, of which it is probable we shall hereafter discover the most remote causes. Would it even be absurd to suppose this quality of melioration in the human species as susceptible of an indefinite advancement; to suppose that a period must one day arrive when death will be nothing more than the effect either of extraordinary accidents, or of the slow and gradual decay of the vital powers; and that the duration of the middle space, of the interval between the birth of man and this decay, will itself have no assignable limit? Certainly man will not become immortal; but may not the distance between the moment in which he draws his first breath, and the common term when, in the course of nature, without malady, without accident, he finds it impossible any longer to exist, be necessarily protracted? As we are now speaking of a progress that is capable of being represented with precision, by numerical quantities or by lines, we shall embrace the opportunity of explaining the two meanings that may be affixed to the word *indefinite*.

In reality, this middle term of life, which
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in proportion as men advance upon the ocean of futurity, we have supposed incessantly to increase, may receive additions either in conformity to a law by which, though approaching continually an illimitable extent, it could never possibly arrive at it; or a law by which, in the immensity of ages, it may acquire a greater extent than any determinate quantity whatever that may be assigned as its limit. In the latter case, this duration of life is indefinite in the strictest sense of the word, since there exist no bounds on this side of which it must necessarily stop. And in the former, it is equally indefinite to us; if we cannot fix the term, it may for ever approach, but can never surpass; particularly if, knowing only that it can never stop, we are ignorant in which of the two senses the term indefinite is applicable to it: and this is precisely the state of the knowledge we have as yet acquired relative to the perfectibility of the species.

Thus, in the instance we are considering, we are bound to believe that the mean duration of human life will for ever increase, unless its increase be prevented by the physical revolutions of the system: but we cannot tell what

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is the bound which the duration of human life can never exceed ; we cannot even tell, whether there be any circumstance in the laws of nature which has determined and laid down its limit.

But may not our physical faculties, the force, the sagacity, the acuteness of the senses, be numbered among the qualities, the individual improvement of which it will be practicable to transmit? An attention to the different breeds of domestic animals must lead us to adopt the affirmative of this question, and a direct observation of the human species itself will be found to strengthen the opinion.

Lastly, may we not include in the same circle the intellectual and moral faculties? May not our parents, who transmit to us the advantages or defects of their conformation, and from whom we receive our features and shape, as well as our propensities to certain physical affections, transmit to us also that part of organization upon which intellect, strength of understanding, energy of soul or moral sensibility depend? Is it not probable that education, by improving these qualities, will at the same time have an influence upon,

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will modify and improve this organization itself? Analogy, an investigation of the human faculties, and even some facts, appear to authorise these conjectures, and thereby to enlarge the boundary of our hopes.

Such are the questions with which we shall terminate the last division of our work. And how admirably calculated is this view of the human race, emancipated from its chains, released alike from the dominion of chance, as well as from that of the enemies of its progress, and advancing with a firm and indeviating step in the paths of truth, to console the philosopher lamenting the errors, the flagrant acts of injustice, the crimes with which the earth is still polluted? It is the contemplation of this prospect that rewards him for all his efforts to assist the progress of reason and the establishment of liberty. He dares to regard these efforts as a part of the eternal chain of the destiny of mankind ; and in this persuasion he finds the true delight of virtue, the pleasure of having performed a durable service, which no vicissitude will ever destroy in a fatal operation calculated to restore the reign of prejudice and slavery. This sentiment is the *afylum*

