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THE CONSTITUTION OF MAN

IN RELATION TO

EXTERNAL OBJECTS.

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THE

CONSTITUTION OF MAN

CONSIDERED

IN RELATION TO EXTERNAL OBJECTS.

BY

GEORGE COMBE.

"Vain is the ridicule with which one foresees some persons will divert themselves, upon finding lesser pains considered as instances of Divine punishment. There is no possibility of answering or evading the general thing here intended, without denying all final causes."—BUTLER'S *Analogy*.

NINTH EDITION.

EDINBURGH:
MACLACHLAN AND STEWART.
LONGMAN & CO., AND SIMPKIN, MARSHALL, & CO., LONDON.
1860.

EDINBURGH: PRINTED BY NEILL AND COMPANY.

ADVERTISEMENT TO THIS EDITION.

GEORGE COMBE died on the 14th of August 1858, leaving to us the care of his Works.

The last edition of the present treatise that he had revised for the press, was the eighth (in post 8vo), which was published in 1847; but the alterations then made were not transferred by him to the "People's Edition" (in royal 8vo), which had previously been stereotyped for the second time in 1841, and impressions of which continued to be frequently thrown off down to the close of 1858. Of all the editions, the total number of copies sold in this country now amounts to 96,500. Numerous editions have been printed also in the United States of North America; while translations have appeared in the French, German, and Swedish languages.

A few months before his death, the Author began to prepare the work for a final edition, which he had long cherished the hope of publishing. Unluckily, the only parts of it which he found health and leisure to revise were the Preface and the Introductory Remarks. These are now printed from his altered copy, with a few verbal corrections which he certainly would have seen to be necessary had he lived to superintend the printing. As to the remainder of the volume, we had to decide between two courses—either to reprint it *verbatim*, or to make such alterations as the lapse of time and the progress of knowledge must have led himself to bestow upon it, and also such as were evidently requisite to harmonize it with the In-

troductory Remarks in their modified condition, and with the views expressed in his latest work—"On the Relation between Science and Religion." After due consideration, we determined to adopt the second alternative, not only as preferable in itself, but as more fully meeting the wishes expressed by the Author in his testamentary instructions. We have, however, been most careful to make only such alterations as we felt sure, from experience gained during the unreserved and very frequent intercourse with him which it was our happiness to enjoy for many years, that he would at once have authorised had they been proposed to himself.

In the royal-8vo editions there is a chapter "On the Relation between Science and Scripture;" but for this was substituted in the eighth edition a new chapter, "On the Relation between Religion and Science." The latter has since been expanded by the Author into the above-mentioned treatise with a similar title; and it is plain from the reference to that book in the Introductory Remarks to the present volume (p. 15), that it was not his intention to treat of the subject in this edition. Even had his design to omit it been less clearly indicated, we should hardly have thought it necessary to reprint a chapter which is almost entirely embodied in the other work.

Some notes which we have thought proper to add are marked as editorial; and in the Appendix we have supplied the extracts composing Notes I. and XI.

ROBERT COX.
JAMES COXE.

EDINBURGH, 18*th August* 1860.

HENDERSON BEQUEST.

On 27th May 1829, the late W. R. Henderson, Esq., younger of Warriston and Eildon Hall, executed a deed of settlement, by which he conveyed to certain trustees such funds as he should die possessed of; and, in the event of his dying without leaving children, he appointed them to pay certain legacies and annuities to friends, and gave the following instructions regarding the application of the residue of his funds:—

"And, lastly, the whole residue of my means and estate shall, after answering the purposes above written, be applied by my said trustees in whatever manner they may judge best for the advancement and diffusion of the science of Phrenology, and the practical application thereof in particular; giving hereby and committing to my said trustees the most full and unlimited power to manage and dispose of the said residue, in whatever manner shall appear to them best suited to promote the ends in view: Declaring, that if I had less confidence in my trustees, I would make it imperative on them to print and publish one or more editions of an 'Essay on the Constitution of Man considered in relation to External Objects, by George Combe,'—in a cheap form, so as to be easily purchased by the more intelligent individuals of the poorer classes, and Mechanics' Institutions, &c.; but that I consider it better only to request their particular attention to this suggestion, and to leave them quite at liberty to act as circumstances may seem to them to render expedient; seeing that the state of the country, and things impossible to foresee, may make what would be of unquestionable advantage now, not advisable at some future period

of time. But if my decease shall happen before any material change affecting this subject, I request them to act agreeably to my suggestion. And I think it proper here to declare, that I dispose of the residue of my property in the above manner, not from my being carried away by a transient fit of enthusiasm, but from a deliberate, calm, and deep-rooted conviction, that nothing whatever hitherto known can operate so powerfully to the improvement and happiness of mankind, as the knowledge and practical adoption of the principles disclosed by Phrenology, and particularly of those which are developed in the Essay on the Constitution of Man, above mentioned."

Mr Henderson having died on 29th May 1832, his Trustees carried his instructions, in regard to the present work, into effect; but, since 1835, it has not been necessary to make any demand on his funds for printing it in any of its forms.

PREFACE.

THIS Work would not have been presented to the public, had I not believed that it contains views of the constitution, condition, and prospects of Man, which deserve attention. But these, I trust, are not ushered forth with anything approaching to a presumptuous spirit. I lay no claim to originality of conception. My first notions of the natural laws were derived from a manuscript work of Dr Spurzheim, with the perusal of which I was honoured in 1824, and which was afterwards published under the title of "A Sketch of the Natural Laws of Man, by G. Spurzheim, M.D." A comparison of the text of it with that of the following pages, will show to what extent I am indebted to my late excellent and lamented master and friend for my ideas on the subject. All my inquiries and meditations since have impressed me more and more with a conviction of their importance. The materials employed lie open to all. Taken separately, I would hardly say that a new truth has been presented in the following work. The parts have nearly all been admitted and employed again and again, by writers on morals, from the time of Socrates down to the present day. In this respect, there is nothing new under the sun. The only novelty in this work respects the relations which acknowledged truths hold to each other. *Physical laws* of nature, affecting our physical condition, as well as regulating the whole material system of the universe,

are universally acknowledged to exist, and constitute the elements of natural philosophy and chemical science: Physiologists, medical practitioners, and all who take medical aid, admit the existence of *organic laws:* And the sciences of government, legislation, and education, indeed our whole train of conduct through life, proceed upon the admission of *laws in morals.* Accordingly, the laws of nature have formed an interesting subject of inquiry to philosophers of all ages; but, so far as I am aware, no author has hitherto attempted to point out, in a systematic way, the relations between those laws and the constitution of Man; which must, nevertheless, be done, before our knowledge of them can be beneficially applied. Dr Spurzheim, in his "Philosophical Principles of Phrenology," adverted to the independent operation of the several classes of natural laws, and pointed out some of the consequences of this doctrine, but without entering into detailed elucidations. The great object of the following treatise is to exhibit the constitution and modes of action of objects and beings external to Man, the laws which they obey in their action, their relations to the human constitution, and the rules of practical conduct which may be deduced from them; also the constitution of Man himself, its modes of action, the laws which have been imposed on it, and the rules of practical conduct deducible from them.

But although my object is practical, a scientific view of the human Mind forms an essential element in the execution of the plan. Without it, no comparison can be instituted between the natural constitution of Man and external objects. Phrenology is simply the physiology of the brain; and as the

brain is the organ of the mental faculties, a correct exposition of the uses of its different parts appears to me to lead necessarily to a system of mental philosophy; and as I feel certain that Phrenology is true, I have assumed it as the basis of this work. But the practical value of the views here propounded does not depend entirely on Phrenology. The latter, as the science of Mind, is itself valuable only in so far as it is a *just exposition* of what exists in human nature. We are physical, organic, and moral beings, subjected to natural laws, whether the connection of different mental qualities with particular portions of the brain, as taught by Phrenology, be admitted or denied. Under the impulse of passion, or by the direction of intellect, men will hope, fear, wonder, perceive, and act, whether the degree in which they habitually do so be ascertainable by the means which it points out or not. In so far, therefore, as this work treats of the known qualities of Man, it may be instructive even to those who reject Phrenology as unfounded; while it can prove useful to none, if the doctrines which it unfolds shall be found not to be in accordance with the principles of human nature, by whatever system these may be expounded. The importance of Phrenology in our present inquiry, however, must not be overlooked. If the brain is the organ of the mind, and if the vigour of its different faculties depends on the size and condition of special cerebral parts, then those who ignore these facts close their understandings against knowledge of the organic conditions which determine the varieties of natural dispositions and talents, and also the means by which God conducts the moral government of the world. This subject is expounded more fully in my work on "The Relation

between Science and Religion," to which I beg leave to refer.

Some persons object to all Mental Philosophy as useless, and argue, that, as Mathematics, Chemistry, and Botany, have become great sciences without the least reference to the faculties by means of which they are cultivated,—so Morals, Religion, Legislation, and Political Economy, have existed, have been improved, and may continue to advance, with equal success, without any help from the philosophy of the mind. Such objectors, however, should consider that lines, circles, and triangles,—earths, alkalies, and acids,—corollas, stamens, pistils, and stigmas,—exist independently of the mind, and may be investigated by the application of the mental powers, in ignorance of the constitution of the faculties themselves—just as we may practise archery without studying the anatomy of the hand; whereas the objects of Moral and Political Philosophy are the qualities and actions of the mind itself:—These objects have no existence independently of mind; and they can no more be systematically or scientifically understood without the knowledge of mental philosophy, than Optics can be cultivated as a science in ignorance of the structure and modes of action of the eye.

Since the first edition of this work appeared in the year 1828, additional attention has been paid to the study of the laws of nature, and their importance has been more generally recognised.

EDINBURGH, *April* 1858.

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INTRODUCTORY REMARKS.

GENERAL VIEW OF THE CONSTITUTION OF HUMAN NATURE, AND ITS RELATIONS TO EXTERNAL OBJECTS.

In surveying the external world, we discover that every creature and every physical object has received a definite constitution, and been placed in certain relations to other beings and things. The natural evidence of the existence of a Deity, and of the mode in which He governs the world, is drawn from contemplating these arrangements. But hitherto the great moral and religious truths which Nature teaches have been undiscerned, or have excited chiefly a barren though sublime admiration, and in consequence have led to few beneficial practical results.

Man obviously stands pre-eminent among sublunary objects, and is distinguished by remarkable endowments above all other terrestrial beings. Nevertheless, no creature presents such anomalous appearances as Man. Viewed in one aspect, he resembles a demon; in another, he almost appears as the image of God. Seen in his crimes, his wars, and his devastations, he might be mistaken for the incarnation of an evil spirit; contemplated in his schemes of charity, his discoveries in science, and his vast combinations for the benefit of his race, he seems a bright intelligence from heaven. The lower animals exhibit a more simple and regulated constitution. The lion is sly and ferocious; but he is regularly so, and, besides, is placed in circumstances suited

to his nature, in which at once scope is given, and limits are set, to the gratification of his instincts. The sheep, on the other hand, is mild, feeble, and inoffensive; but its external condition also is suited to its constitution, and it apparently lives and flourishes in as great enjoyment as the lion. The same remark applies to other inferior animals. Their bodily organs, faculties, instincts, and external circumstances, form parts of a system in which adaptation and harmony are discoverable; and the enjoyment of the animals depends on the adaptation of their constitution to their external condition. If we saw the lion one day tearing in pieces every animal that crossed his path, and the next oppressed with remorse for the slaughter of his victims, or compassionately healing those which he had mangled, we should exclaim, What an inconsistent creature! and conclude that he could not possibly be happy, on account of this opposition between the principles of his nature. Two conditions are essential to enjoyment: first, The different instincts of an animal must be in harmony with each other; and, secondly, Its constitution must be in accordance with its external condition.

When, keeping these principles in view, we direct our attention to Man, very formidable anomalies present themselves. The most opposite instincts or impulses exist in his mind: actuated by combativeness, destructiveness, acquisitiveness, and self-esteem, the moral sentiments being in abeyance, he is almost a fiend; on the contrary, when inspired by benevolence, veneration, hope, conscientiousness, ideality, and intellect, the benignity, serenity, and splendour of a highly elevated nature beam from his countenance, and radiate from his eye. He is then lovely, noble, and gigantically great. But how shall these conflicting tendencies be reconciled, and how can external circumstances be devised that shall accord with such heterogeneous elements? Here again a conviction of the power and goodness of the Deity comes to our assistance. Man is obviously a most important part of the present system of creation; and, so long as our knowledge of his nature is incomplete, we ought not to con-

sider his condition as inexplicable. The nature of Man has hitherto, to nearly all philosophical purposes, been unknown; and both the designs of God as indicated in it, and the situation of Man himself, have been judged of ignorantly and rashly. The sceptic has reared arguments against religion, and in different ages ignorant or interested men have founded systems of superstition, on the disorder and inconsistency which are too readily admitted to be inseparable attributes of human existence on earth. But I venture to hope that Man will yet be found in harmony within himself, and with the condition in which he is placed.

I am aware that some persons, whose piety is entitled to respect, conceive, that, as the great revolutions of human society, as well as all events in the lives of individuals, take place under the guidance of the Deity, it is presumptuous, if not impious, to endeavour to scan their causes and effects. But as intellectual faculties have been given us, it is presumable that God governs in accordance with them, and that their constitution will enable Man to investigate the Divine order of nature. The young swallow, when it migrates on the approach of the first winter of its life, is impelled by an instinct implanted by the Deity, and it neither knows the causes that prompt it to fly, nor the end to be attained by its flight. It has no powers exciting it to reflect on itself and external objects, and to inquire whence came its desires, or to what object they tend. Man, however, has been differently framed. He has received faculties fitted to observe phenomena, and to trace causes and effects; and *the external world affords scope to these powers.* We are entitled, therefore, to say that we are commanded by Divine authority to observe and inquire into the causes that operate in us and around us, and into the results that naturally follow, and to modify our conduct according to the discoveries which we shall make.

To enable us to form a just estimate of our duty and interest as the rational occupants of this world, we may inquire briefly into the constitution of our own nature and that of external objects.

The constitution of this world does not look like a system of optimism. It appears to be arranged, to some extent, on the principle of slow and progressive improvement. Physical nature has undergone many revolutions; and we learn from geology that it has been gradually prepared for successive orders of living beings, rising higher and higher in the scale of organisation and intelligence, until Man appeared.

Geology aims at giving an exposition of the changes which the crust of the earth and its inhabitants have undergone since the original formation of the globe, and it treats of conditions of things which must have existed long anterior to the dates of human records. The causes of many of the phenomena which it describes are still subjects of discussion; but a great mass of well-ascertained facts concerning the condition of the globe itself, and of its early inhabitants, has been collected, which may fairly be regarded as solid scientific truth. The facts bear a relation to the subject of the present work, in so far as they proclaim that these important changes had taken place in the crust of the globe, and among its inhabitants, before Man appeared. All the solid materials of the earth have been in a fluid, and perhaps in a gaseous, condition, and what is now dry land has been at the bottom of the ocean. The remains of myriads of plants and animals are found entombed in the rocks, without the slightest traces of man's contemporaneous existence.

However startling the results of geological investigations may appear, the facts which establish them are too authentic and precise to leave room for doubt as to their substantial truth. "There is no limit," says Professor Ansted,* "to the number and variety of the remains of animal and vegetable existence. At one time we see before us, extracted from a solid mass of rock, a model of the softest, most delicate, and least easily preserved parts of animal structure; at another time the actual bones, teeth, and scales, scarcely altered from their condition in the living animal.

* Geology, Introductory, Descriptive, and Practical, by David Thomas Ansted, M.A., F.R.S., &c. (1844), vol. i. p. 53.

The very skin, the eye, the footprints of the creature in the mud, and the food that it was digesting at the time of its death, together with those portions that had been separated by the digestive organs as containing no nutriment, are all as clearly exhibited as if death had within a few hours performed its commission, and all had been instantly prepared for our investigation. We find the remains of fish so perfect, that not one bone, not one scale, is out of place or wanting; and others, in the same bed, presenting only the outline of a skeleton, or various disjointed fragments. We have insects, the delicate nervines of whose wings are permanently impressed upon the stone in which they are embedded; and we see occasionally shells, not merely retaining their shape, but perpetuating their very colours,—the most fleeting, one would think, of all characteristics,—and offering evidence of the brilliancy and beauty of creation at a time when Man was not yet an inhabitant of the earth, and there seemed no one to appreciate the beauties which we are perhaps too apt to think were called into existence only for our admiration."

In regard to the causes of these phenomena, Sir Humphrey Davy conceived the globe to have been originally a fluid mass, with an immense atmosphere, revolving in space around the sun. By its cooling it became, says he, gradually condensed, and at length dry land and sea appeared. Five successive races of plants, and four successive races of animals, he believed to have been created and swept away, before the system of things became so permanent as to fit the world for Man.*

In opposition to these views, Sir Charles Lyell maintains that "the popular theory of the successive development of the animal and vegetable world, from the simplest to the most perfect forms, rests on a very insecure foundation," and that the changes in the condition of the globe, brought to light by geological investigations, may, in the present state of our knowledge, be referred to causes still in operation.†

* Consolations in Travel, by Sir H. Davy (1831), p. 134.

† Principles of Geology, Book I., chap. ix., seventh edition, 1847.

More recently, the author of "Vestiges of the Natural History of Creation" endeavours to show that the primitive formation of the globe came to pass in accordance with the well-known laws of physics, and that even the organic world has been developed under the care of the Deity, not by special interferences, but in the manner of natural law.*

In reference to the object of the present work, it is not necessary to decide on the merits of these different hypotheses. All geological authorities agree in representing physical nature as having undergone a variety of changes, and having at length attained to the condition which it now presents, before Man occupied its surface. "I need not dwell," says Lyell, "on the proofs of the low antiquity of our species, for it is not controverted by any experienced geologist. . . . It is never pretended that our race co-existed with assemblages of animals and plants, of which *all or even a large proportion of the species* are extinct." (P. 143.)

"In all these various formations," says Dr Buckland, "the coprolites" (or dung of the Saurian reptiles in a fossil state, exhibiting scales of fishes, and other traces of the prey which they had devoured) "form records of warfare waged by successive generations of inhabitants of our planet on one another; and the general law of nature, which bids all to eat and be eaten in their turn, is shown to have been co-extensive with animal existence upon our globe, the *carnivora* in each period of the world's history fulfilling their destined office to check excess in the progress of life, and maintain the balance of creation."

* The views of this author have been objected to as excluding the influence of the Deity in the universe; but Bishop Butler remarks, that "if civil magistrates could make the sanctions of their laws take place without interposing at all after they had passed them, without a trial and the formalities of an execution; if they were able to make their laws execute themselves, or every offender to execute them upon himself, we should be just in the same sense under their government as we are now, but in a much higher degree and more perfect manner." If this argument be admitted, the hypothesis of the author of the "Vestiges" cannot logically be considered as denying the influence of the Divine Will on the universe. Even his zealous antagonist Hugh Miller admits that the charge is groundless.

Thus it is admitted by the most esteemed authorities, that death and reproduction formed parts of the order of nature before Man can be traced on the globe.

Let us now contemplate Man himself, and his adaptation to the external world. The order of nature seems not to have been changed at his introduction, but he appears to have been adapted to it. He received an organised structure, and animal, moral, and intellectual powers. His brain is unquestionably the workmanship of God, and there exist in it organs of faculties impelling him to kill that he may eat, to oppose aggression, and to shun danger—impulses related to a constitution of nature similar to that which existed previously to his existence. Man, then, apparently took his station among, yet at the head of, the beings that inhabited the earth at his introduction. He is to a certain extent an animal in his structure, powers, feelings, and desires, and is adapted to a world in which death reigns, and generation succeeds generation. This fact, although so trite and obvious as to appear scarcely worthy of being mentioned, is of importance in treating of Man; because the human being, in so far as he resembles the inferior creatures, is capable of enjoying a life like theirs: he has pleasure in eating, drinking, sleeping, and exercising his limbs; and one of the greatest obstacles to his improvement is, that many are contented with these enjoyments, and consider it painful to be compelled to seek higher sources of gratification. But to the animal nature of Man have been added moral sentiments and reflecting faculties, which not only place him above all other creatures on earth, but constitute him a different being from any of them—a rational and accountable being. These faculties are his best and highest gifts, and the sources of his purest and intensest pleasures. They lead him directly to the great objects of his existence—obedience to the laws of God, and love of his fellow-men. But this peculiarity attends them, that while his animal faculties act powerfully of themselves, his rational faculties require to be cultivated, exercised, and instructed, before they will yield their full harvest of enjoyment.

The material world is so arranged as to hold forth strong inducements to Man to cultivate his higher powers. In surveying it, the philosophic mind perceives in external nature an assemblage of stupendous powers, too great for the feeble hand of Man entirely to control, but kindly subjected, within certain limits, to the influence of his will. Man is introduced on earth apparently as a homeless stranger, helpless and unprovided for; but the soil on which he treads is endowed with a thousand capabilities of production, which require only to be excited by his intelligence to yield the most ample supplies for his wants. The impetuous torrent rolls its waters to the main; but before it dashes from the mountain cliff he can withdraw it from its course, and render it subservient to his will. Ocean extends o'er half the globe its liquid plain, in which no path appears, and the rude winds oft lift its waters to the sky; but there the skill of Man may launch the strong-knit bark, spread forth the canvas to the gale, and make the trackless deep a highway through the world. In such a state of things, knowledge is truly power; and it is highly important to human beings to become acquainted with the constitution and relations of every object around them, that they may discover its capabilities of ministering to their advantage.

Where these physical energies are too powerful to be controlled, Man has received intelligence by which he may observe their courses, and accommodate his conduct to their influence. This capacity of adaptation is a valuable substitute for the power of regulating them by his will. He cannot arrest the sun in its course, and thus avert the wintry storms, and cause perpetual spring to bloom around him; but, by the exercise of his intelligence and corporeal energies, he is able to foresee the approach of dark clouds and rude winds, and to place himself in safety from their injurious effects. These powers of applying nature to his use, and of accommodating his conduct to its course, are the direct results of his rational faculties; and in proportion to their cultivation is his sway extended. While ignorant, he is a helpless creature;

but every step in knowledge is accompanied by an augmentation of his command over his own condition.

Further, we are surrounded by countless beings, inferior and equal to ourselves, whose qualities yield us happiness or bring evil upon us, according as we affect them agreeably or disagreeably by our conduct. To draw forth all their excellences, and cause them to diffuse joy around us,—to avoid touching the harsher springs of their constitution, and bringing painful discord to our feelings,—it is necessary that we should know their nature, and act with a habitual regard to the relations established between them and ourselves.

Man, ignorant and uncivilised, is cruel, sensual, and superstitious. The world affords some enjoyments to his animal feelings, but it perplexes his moral and intellectual faculties. External nature exhibits to his mind a mighty chaos of events, and a dread display of power. The chain of causation appears too intricate to be unravelled, and the power too stupendous to be controlled. Order and beauty, indeed, occasionally gleam forth to his eye from detached portions of nature, and seem to promise happiness and joy; but more frequently clouds and darkness brood over the scene, and disappoint his fondest expectations. Evil seems so mixed up with good, that he regards it as either its direct product, or its inseparable accompaniment. Nature is never contemplated with a clear perception of its adaptation to promote the enjoyment of the human race, or with a well-founded confidence in the wisdom and benevolence of its Author.

On the other hand, when civilised and illuminated by knowledge, Man discovers, in the objects and occurrences around him, a scheme beautifully arranged for the gratification of his whole powers, animal, moral, and intellectual; he recognises in himself the intelligent and accountable subject of an all-bountiful God, and in joy and gladness desires to study His works, to ascertain His laws, and to yield to them a steady and willing obedience. Without undervaluing the pleasures of his animal nature, he tastes the higher, more

refined, and more enduring delights of his moral and intellectual capacities; and he then calls aloud for education, as indispensable to the full enjoyment of his powers.

If this representation be correct, we perceive the advantage of gaining knowledge of our own constitution and of that of external nature, with a view to the regulation of our conduct according to rules drawn from such knowledge. Our constitution and our position equally imply, that we should not remain contented with the pleasures of mere animal life, but should take the dignified and far more delightful station of moral and rational occupants of the world.

As geology teaches that there was progression in the series of changes of the earth and its inhabitants before Man appeared, so his civil history proclaims the march, although often slow and vacillating, of moral and intellectual improvement. To avoid too extensive an inquiry, unsuitable to an introductory discourse, let us confine our attention to the aspects of society in our native country.

At the time of the Roman invasion, the inhabitants of Britain lived as savages, and appeared in painted skins. After the Norman conquest, one part of the nation was placed in the condition of serfs, condemned to labour like beasts of burden, while the other devoted itself to war. The nobles fought battles during the day, and in the night probably dreamed of bloodshed and broils. Next came the age of chivalry. These generations severally believed their own condition to be the highest, or at least the permanent and inevitable lot of Man. Now, however, have come the present arrangements of society, in which millions of men are shut up in cotton-mills and other manufactories for ten or twelve hours a day; others labour under ground in mines; others plough the fields; while thousands of higher rank pass their lives in frivolous amusements. The elementary principles of the human constitution, both bodily and mental, were the same in our painted ancestors, and in their chivalrous descendants, as they are in us, their shopkeeping, manufacturing, and money-gathering children. Yet how

different the external circumstances of these several generations! If, in the savage state, the mental faculties of Man were in harmony among themselves and with his external circumstances, he must then have enjoyed all the happiness of which his nature was capable, and have erred when he changed his condition;—if the institutions and customs of the age of chivalry were calculated to gratify his whole nature harmoniously, he must have been unhappy as a savage, and must be miserable now;—if his present condition be the perfection of his nature, he must have been far from enjoyment both as a savage and as a feudal warrior;—and if none of these conditions have been in accordance with his constitution, he must still have his happiness to seek.

Every age, accordingly, has testified that *it* was not in possession of contentment; and the question presents itself, If human nature has received a definite constitution, and if one arrangement of external circumstances is more suited to yield it gratification than another, what *are* that constitution and that arrangement? No one among the philosophers has succeeded in giving us a satisfactory answer to these questions. If we in Britain have not reached the limits of attainable perfection, what are we next to attempt? Are we and our posterity to spin and weave, build ships, and speculate in commerce, as the highest occupations to which Man can aspire, and to persevere in these labours as the highest till the end of time? If not, who shall pilot us in our future voyage on the ocean of existence, and by what chart of philosophy shall our steersman be guided?

The British people are here cited as a type of mankind at large; for in every age and every clime, similar races have been run, with similar conclusions. One answer may be returned to these inquiries. Man is apparently a progressive being; and having been designed for a higher path than that allotted to the brutes, he has received intellect to discover his own nature and that of external objects, and been left to find out for himself, by the exercise of that in-

tellect, the method of placing his faculties in harmony among themselves, and with the external world in which he is placed. Experience and time are necessary to attain these ends; and history exhibits the human race as only in a state of progress towards the full development of its capabilities to attain them.

As long as Man remained ignorant of his own nature, he could not designedly form his institutions in accordance with it. Until his faculties and their relations became the subjects of his observation and reflection, they operated chiefly as blind impulses. His habits were savage, because at first his animal propensities were not directed by the moral sentiments, or enlightened by reflection. He next assumed the condition of the barbarian, because his higher powers had made some advance, but had not yet attained supremacy; and now he devotes himself, in Britain, to commerce and manufactures, because his inventive and constructive faculties have given him power over physical nature, while his love of property and his ambition are predominant, and are gratified by such employments. Not one of these conditions, however, has been adopted from design, or from perception of its suitableness to the nature of Man. He has been ill at ease in them all; but it does not follow that he must continue for ever equally ignorant of his nature, and equally incapable of framing institutions in harmony with it. The simple facts, that the Creator has bestowed on Man reason, capable of discovering his own nature and its relations to external objects; that He has left him to apply it in framing suitable institutions to ensure his happiness; that, nevertheless, Man has hitherto been ignorant of his nature and of its relations; and that, in consequence, his modes of life have never been adopted from *enlightened views of his whole qualities and capacities*, but have sprung up from the impulsive ascendency of one blind propensity or another,—warrant us in saying, that a new era will begin when Man shall study his constitution and its relations with success; and that the future may exhibit him assuming his station as a rational creature,

seeking his happiness where it is really to be found, and at length attaining to higher gratification than any which he has hitherto enjoyed.

Here the inquiry naturally occurs, Why has Man remained for so many tedious ages unacquainted with his own nature and its relations? The answer is, that, before the discovery of the functions of the brain, it was impossible to have a practical philosophy of mind. The philosophy of Man was cultivated as a speculative, and not as an inductive science; and even when attempts were made at induction, the manner in which they were conducted was at variance with the fundamental requisites of a sound philosophy.* Consequently, even the most enlightened nations have never possessed any true philosophy of mind, but have been bewildered amidst innumerable contradictory theories.

This deplorable condition of the philosophy of human nature is strikingly and eloquently described by Mons. de Bonald, in a sentence translated by Mr Dugald Stewart, in his Preliminary Dissertation to the Encyclopædia Britannica: "Diversity of doctrine," says he, "has increased from age to age, with the number of masters, and with the progress of knowledge; and Europe, which at present possesses libraries filled with philosophical works, and which reckons up almost as many philosophers as writers; poor in the midst of so much wealth, and uncertain, with the aid of all its guides, which road it should follow; Europe, the centre and focus of all the lights of the world, has yet its *philosophy* only in expectation."

In our own country, two views of the constitution of the world and of human nature have long been prevalent, differing widely from each other, and which, if legitimately followed out, would lead to different practical results. The one is, that the world, including both the physical and moral departments, is in itself well and wisely constituted, on the principle of

* See my System of Phrenology, fifth edition, p. 58.

a progressive system, and therefore capable of improvement. This hypothesis ascribes to the power and wisdom of the Divine Being the whole phenomena which nature, animate and inanimate, exhibits; because, in conferring on each part the specific qualities and constitution which belong to it, and in placing it in the circumstances in which it is found, He is assumed to have designed, from the first, the whole results which these qualities, constitution, and circumstances are capable of exhibiting. No countenance is given by this theory to atheism. On the contrary, it affords the richest and most comprehensive field imaginable for tracing the evidence of Divine power, wisdom, and goodness in creation.

The other hypothesis is, that the world was perfect at first, but fell into derangement, continues in disorder, and can be rectified only by supernatural means.

If the former view be sound, an important object of Man, as an intelligent being in quest of happiness, must be to study the elements of external nature, and their capabilities; the elementary qualities of his own nature, and their applications; and the relationship between these. His second object will be to discover and carry into effect the conditions—physical, moral, and intellectual—which, in virtue of this constitution, require to be realised before the fullest enjoyment of which he is capable can be attained.

According to the second view, little good can be expected from the merely natural action of creation's elements, especially the mental ones, these being all essentially disordered; and human improvement and enjoyment must be derived chiefly from spiritual influences. If the one hypothesis be sound, Man must fulfil the *natural conditions* requisite to the existence of religion, morality, and happiness, *before* he can reap full benefit from religious truth: according to the other, he must believe aright in religion, and be the subject of spiritual influences to rectify the disorders of nature, before he can become capable of virtue or enjoyment: in short, according to it, science, philosophy, and all arrangements of the physical, moral, and intellectual elements of nature, are

subordinate, in their effects upon human happiness on earth, to religious faith.

I have discussed these opinions in a separate work, "On the Relation between Science and Religion;" here I confine myself to the following observations.

While Philosophy has continued in so unprofitable a condition, Religion also has failed to enter into harmonious alliance with the order of nature. Science has banished from the minds of well-educated persons belief in the exercise by the Deity, in our day, of His power in a supernatural manner, as a means of influencing human affairs. Men now act on the belief that this world's administration is conducted on the principle of an established order of nature, in which objects and agencies are presented to Man for his study, are to some extent placed under the control of his will, and are wisely calculated to promote his enjoyment. The creed of the modern man of science is well expressed by Mr Sedgwick in the following words:—"If there be a superintending Providence, and if His will be manifested by general laws, operating both on the physical and moral world, *then must a violation of these laws be a violation of His will, and be pregnant with inevitable misery.* Nothing can, in the end, be expedient for Man, *except it be subordinate to those laws the Author of Nature has thought fit to impress on his moral and physical creation.*" Other clergymen also embrace the same view. The Rev. Dr Thomas Guthrie, in his admirable "Plea for Ragged Schools," observes, that "they commit a grave mistake who forget that injury as inevitably results from flying in the face of a moral or mental, as of a physical law."*

Nevertheless, the natural order of providence is very scantily taught by the masters in theology to their followers, as of Divine authority, and as regulating this world's affairs. In all earnestness I put the following questions. Are the fertility of the soil, the health of the body, the prosperity

* See further quotations from theologians in the APPENDIX, No. I.

of individuals and of nations—in short, the great secular interests of mankind—now regulated by Divine power exercised in a special and supernatural way? Science answers that they are not. Are they then governed by fixed and comprehensible natural laws? If they are not, then is this world a theatre of anarchy, and consequently of atheism—it is a world without the practical manifestation of a God. If, on the other hand, as science shows, such laws exist, they must be of Divine institution, and worthy of all reverence. But in the standards of what Church, from the pulpits of what sect, and in the schools of what denomination of Christians, are these laws taught to either the young or the old as of Divine authority, and as practical guides for conduct in this world's affairs? If we do not now experience a special supernatural government of the world, but a government by natural laws; and if these laws are not studied, honoured, and obeyed as God's laws, are we not actually a nation without a religion in harmony with the true order of providence, and therefore without a religion adapted to practical purposes?

The answer will perhaps be made, that this argument is rank infidelity; but, with all deference, I reply that the denial of a regular, intelligible, wisely-adapted, and divinely-appointed order of nature, as a guide for human conduct in this world, is practically atheism; while the acknowledgment of the existence of such an order, accompanied by the nearly universal neglect of teaching and obeying its requirements, is true infidelity, disrespectful to God, and injurious to the best interests of Man. The public mind is opening to such views as these; and they must in future be met with other arguments than charges of irreligion, and appeals to bigotry and passion.

There must be a cause for this untoward state of the relationship between religion and science, and it appears to me to be the following.

In surveying the world, we perceive that definite qualities have been bestowed on the human mind and on external objects, and certain relations been established between them; that the mental faculties have been incessantly operat-

ing according to their inherent tendencies, generally aiming at good, always desiring it, but often missing it, through ignorance and blindness, yet capable of attaining it when enlightened and properly directed. The baneful effects of ignorance are everywhere apparent. Three-fourths of the mental faculties have direct reference to this world, and in their functions appear to have no intelligible relation to another—such are amativeness, philoprogenitiveness, combativeness, destructiveness, constructiveness, acquisitiveness, secretiveness, and others; while the remaining fourth appear calculated to act both in this life and in a higher state of existence—such are benevolence, ideality, wonder, veneration, hope, conscientiousness, and intellect. While the philosophy of mind continued a purely abstract theory, moralists and divines enjoyed an unlimited privilege (of which they largely availed themselves) of ascribing or denying to human nature whatever qualities best suited their several systems. But now the case is different. Organs cannot be added to or displaced from the brain by the fancy or the logic of contending disputants or sects; and philosophers and divines must hereafter study human nature as it exists, and accommodate their views to its actual qualities and relations. To guide and successfully apply the former class of faculties to the promotion of human happiness, it appears indispensable that the faculties themselves,—the physical conditions on which their strength and weakness, inertness and vivacity, depend,—the relations established between them and the external world, which is the theatre of their action,—and, finally, the relation between them and the superior faculties, which are destined to direct them, should be known; and yet scarcely anything *is* known, in a philosophical and practical sense, on these points, by the people at large.

If I am correct in saying that these faculties, by their constitution, appear to have reference to this world alone, then knowledge useful for their guidance may be obtained from the philosophy of this world; and the wisdom which is to reduce them to order may receive important aids from

studying the constitution which has been bestowed on them, and the relations which have been instituted between them and the other departments of nature. Divine wisdom and goodness will be found to pervade them; for God has bestowed on us intellect to discover His will, and sentiments disposing us to obey it, in whatever record its mandates are inscribed.

Knowledge of the constitution, capabilities, and relations of sublunary things and beings, is indispensable also to the proper exercise and direction of the *superior* powers of the mind. In all ages, practical men have dedicated three-fourths of their time to pursuits calculated to gratify the inferior faculties; but, unfortunately, the remaining fourth has not been devoted to objects related to their higher powers. A defective intellectual education has left them incapable of deriving pleasure from the study of nature; while, owing to the barbarism which has pervaded society in general, there has been only an imperfect moral atmosphere in which their superior sentiments could play. Ambition, that powerful stimulant of the mind in social life, has not been directed enough to moral objects, but generally the reverse. The hours which should have been dedicated to the improvement of their higher faculties have been either devoted to the pursuit of gain, sensual pleasure, or the objects of a vulgar vanity, or spent in trifling amusements; and there has been little onward purpose of moral and intellectual advancement in the secular occupations of society. But the divines who formed public opinion, so far from discovering that this disorder is not inherent in the constitution of nature, and considering that Christianity, in teaching the doctrine of the supremacy of the moral faculties, necessarily implies the adaptation of the human mind to a state of society accordant with that principle,—fell into the error of regarding the world not only as deranged in all its parts, but as consisting of elements incapable of natural rectification; and they thus added strength and permanence to the evils originating in ignorance and unbridled passion.

I am far from casting blame upon the excellent men who fell into these mistakes: such errors were inevitable at the time when they lived, and with the lights which they possessed; but I point them out as imperfections which ought to be removed. The popular theology was elaborated in the very dawn of modern civilisation, when little was known scientifically either of the philosophy of the human mind, or of the laws which govern the natural world; and in consequence of this ignorance, it was a difficult task to form a theology in harmony with both. The greater number of philosophers and divines, having failed to discover a consistent order of administration in the moral world, rashly concluded that none such exists, or that it is inscrutable by human intelligence. The churches which have at all recognised the order of nature, have attached to it a lower character than that which truly belongs to it. They have treated secular knowledge chiefly as an object of curiosity and a source of gain, and have given to actions intelligently founded on it the character of prudence. So humble has been their estimate of the importance of science, that they have not systematically called in the influence of the religious sentiments, to hallow, elevate, and enforce the teachings of Nature. In most of their schools the elucidation of the relations of science to human conduct is omitted altogether, and the teaching of catechisms of human compilation usurps its place.

Meantime, people proceed in their secular enterprises on the basis of natural science, so far as they have been able to discover it. If practical men send a ship to sea, they endeavour to render it staunch and strong, and to place in it an expert crew and an able commander, as conditions of safety, dictated by their views of the order of nature which reigns in flood and storm. If they are sick, they resort to a physician, to restore them to health according to the laws which govern the human organism. If they suffer famine from wet seasons, they drain their lands; and so forth. All these practices and observances are taught and enforced by men of science and the secular press, as measures of practical

prudence; but few churches recognise the order of nature, on which they are founded, as a becoming subject of religious instruction.

Nevertheless, the relation between religion and science has continued to form an interesting and important subject of investigation. The Earl of Bridgewater, who died in 1829, left the sum of L.8000, to be applied by the President of the Royal Society of London in paying any person or persons, to be selected by him, "to write, print, and publish one thousand copies of a work 'On the Power, Wisdom, and Goodness of God, as manifested in the Creation;' illustrating such work by all reasonable arguments, as, for instance, the variety and formation of God's creatures in the animal, vegetable, and mineral kingdoms; the effect of digestion, and thereby of conversion; the construction of the hand of man, and an infinite variety of other arguments; as also by *discoveries, ancient and modern, in arts, sciences, and the whole extent of literature.*" The President of the Royal Society called in the aid of the Archbishop of Canterbury and of the Bishop of London, and with their concurrence nominated eight gentlemen to write eight treatises on different branches of this great subject.

One of the objects of the Earl of Bridgewater appears to have been to ascertain what the character of external nature and the capacities of the human mind really are, and what is the adaptation of the one to the other; questions of vast importance in themselves, and which can be solved only by direct, bold, and unbiassed appeals to nature. This subject was committed to Dr Chalmers.

In the execution of this object, the first inquiry should have been, "What are the constitution and laws of action of the human mind?" because, before we can successfully trace the adaptation of objects to each other, we must be acquainted with each separately. But Dr Chalmers and all the other authors of the Bridgewater Treatises neglected this branch of inquiry. They did not perceive that as, in this world, mind is unknown except as a function of the brain, physi-

ology is indispensable to supply the basis of a true mental philosophy. Although Gall had long previously discovered, and Spurzheim and others had taught, the functions of the different parts of the brain, and the influence of their size and condition on particular mental powers, they rejected this instruction, and, in consequence of their ignorance, did not attempt to assign to human nature any definite constitution. They therefore failed to throw new and practical light on the moral government of the world.

In the following work, the first edition of which was published in 1828, before the Earl of Bridgewater's death, I have endeavoured to avoid this inconsistency. Being convinced, after minute and long-continued observation, that Phrenology is the true philosophy of mind, I have assumed it as the basis of my reasoning. In this inquiry, it is indispensably necessary to adopt some system of mental philosophy, in order to obtain one of the elements of the comparison; but the reader, if he choose, may regard the phrenological views as hypothetical, and judge of them by the result; or he may attempt to substitute in their place any better system with which he is acquainted, and try how far it will enable him to proceed successfully in the investigation.

In the next place, in instituting the comparison in question, I have brought prominently into view, and endeavoured to substantiate and apply, a doctrine which in my opinion is the key to the true theory of the Divine government of the world, but which has not hitherto been duly appreciated—namely, THE INDEPENDENT OPERATION OF THE LAWS OF NATURE.

The meaning which I attach to the expressions "Laws of nature" and "Natural laws," may be thus explained:—Every object and being in nature has received a definite constitution, and also specific powers of acting on other objects and beings. The action of each force in the same circumstances is so regular, that we describe the force as operating under laws imposed on it by God; but these words indicate merely our perception of the regularity of the action. It is impossible for man to alter or break a natural law, in

this sense of the phrase; for the action of the forces, and the effects they produce, are placed beyond his control. But the observation of the action of the forces leads Man *to draw rules from it for the regulation of his conduct*, and these rules also are called "natural laws," because it is through nature that God reveals and prescribes them to the human mind. In perusing the following pages, this double signification of the phrase should be steadily kept in view: the former is the sense in which it is employed by the physiologist and the natural philosopher; the latter, that in which it is most commonly used by the jurist and the moralist. To speak of "obeying" and "disobeying" a natural law in the latter sense of the phrase, is to speak literally and with precision; but to speak of "obeying" or "disobeying" a natural law in the former sense (as, for instance, the law of gravitation), is to say in a *figurative* manner that we adapt, or fail to adapt, our conduct to the fixed order and modes of action of things.

The lower animals are deficient in some of the faculties which enable Man to observe and interpret the action and effects of the natural forces, and so are incapable of drawing from them, so extensively as he can do, rules for the guidance of their conduct: but in them this defect is compensated by instincts, which in many instances lead them to act in accordance with the laws of nature without knowing them.

Important consequences follow from this order of nature. If we fail to attend to the operations of the natural forces, we may unknowingly act in opposition to them; but as the action is inherent in the things, and does not vary with our state of knowledge, we must suffer from our ignorance and inattention. Or we may know the forces and the consequences which their action inevitably produces, but, from ignorance that through them God is dictating to us rules of conduct, or from mistaken notions of duty, from passion, wilfulness, or other causes, we may disregard them in our conduct. Here again, however, the consequences will not be

altered to suit our ignorant errors or humours; we must obey or suffer.

As every object has received a definite constitution and specific powers of action, there must be as many laws of nature as there are different substances. For example, acids act differently from alkalis, and have therefore different laws; nay, each acid and each alkali has specific powers of action and stands in specific relations to other substances, and each has its own laws. The object of scientific research is to discover the constitution, the forces, the relations, and the laws, of all existing beings and things; and the aim of the moralist and divine should be to deduce from this knowledge rules for the guidance of human conduct.

The laws of nature, although so extensive, may, for our present purpose, be divided into three great classes—Physical, Organic, and Moral; and the doctrine I would enforce is, that the objects governed by these classes of laws respectively, manifest *distinct forces, each of which acts according to its own laws;* that the human constitution has been framed with designed relation to the forces; that Man cannot alter or evade their action, nor avert the consequences of them; and that hence his wellbeing is greatly influenced by the extent of his knowledge of, and compliance with, the laws of their operation. For example, the most pious and benevolent missionaries sailing to civilise and Christianise the heathen, may, if they embark in an unsound ship, be drowned by disregarding a physical law, without the slightest reference to the moral excellence of their design. On the other hand, if the greatest monsters of iniquity were embarked in a staunch and strong vessel, and managed it well, they might, and on the general principles of the government of the world they would, escape drowning in circumstances exactly similar to those which would send the missionaries to the bottom. There appears something inscrutable in such events, if only the *moral qualities* of the men be contemplated; but if the principle be recognised, that ships float in virtue of a purely physical law, and that physical objects and moral beings act

under distinct laws, each set being paramount in its own sphere, the consequences will assume a totally different aspect.

In like manner, *organised* bodies act under laws different from those to which purely physical substances and moral beings are subject. Thus one man, who has inherited a sound bodily constitution from his parents, and observed the rules of temperance and exercise, may cheat, lie, blaspheme, and annoy his fellow-men, and nevertheless for a long time enjoy robust health;—while another, if he have inherited a feeble constitution, and disregarded the laws of diet and exercise, may suffer pain and sickness, although he may be a paragon of every Christian virtue. These results are frequently observed; and on such occasions the darkness and inscrutable perplexity of the ways of Providence are generally moralised upon—or a future life is called in, as the scene in which these crooked paths are to be made straight. But if my views are correct, Divine wisdom and goodness are conspicuous in these events themselves; for by this distinct operation of the organic and moral laws, order is preserved in the creation, and, as will afterwards be shown, the means of discipline and improvement are afforded to all the human faculties.

The *moral and intellectual* laws also have an independent operation. From an attentive study of our constitution, it appears that the Divine Ruler has conferred on Man organs of respiration, a heart and blood-vessels, a stomach and other organs of nutrition, and so forth; that to each of these systems He has given a definite constitution, and specific modes of action; and that He has appointed definite relations between each of them and all the others, and between each of them and the objects of external nature: and experience teaches us that health accompanies the normal and harmonious action of the whole, and that disease, pain, and premature death, are the consequences of their disproportionate and abnormal action.

For example, if we desire to know the laws of the sense

of hearing, we shall best succeed by studying the structure and modes of action of the ear, and examining its relations to the air, to the constitution of sonorous bodies, to the brain, and also to the digestive, respiratory, and circulating systems of the body, on the action of which the sense of hearing indirectly depends. All these actions and relations are instituted by God, and are subject to laws which Man cannot alter. These are the natural laws of the sense of hearing. But it is no abuse of language to say, that, in studying those details, we should be studying the conditions under which, within certain limits, we may, pretty much at our discretion, retain or forfeit, improve or impair the sense of hearing. In the structure, the functions, and the relations of the organs of this sense, therefore, we should discover rules for the guidance of our conduct. The same proposition may be repeated in regard to all our animal, moral, and intellectual faculties: each of them acts by means of a specific cerebral organ; the structure, functions, modes of action, and relations of each organ are fixed, and Man cannot alter them. By studying these we may discover the natural laws which govern each of our mental powers; and also the means by which we may direct each to its proper objects, and increase or diminish its vigour. From this knowledge we may deduce rules of great practical value for our guidance.

As each of these mental organs is characterised by a specific constitution, functions, and relations, there are as many natural mental laws as there are organs; and as each has a special sphere, each is to that extent independent of the others. For example, by hunting and killing animals, we directly exercise the organs of destructiveness, but not those of benevolence. By attending the sick and succouring the wretched, we directly cultivate benevolence; and so forth.

Now, specific consequences, which Man cannot alter, are attached to the use and abuse of each mental faculty. The man who cultivates his intellect and higher sentiments, and who habitually obeys their dictates, will enjoy within him-

self a fountain of *moral and intellectual happiness*, which is the appropriate reward of that obedience. He will also become more capable of studying, comprehending, and obeying the physical and organic laws; of placing himself in harmony with the order of creation; and of attaining the highest degree of perfection, and reaping the greatest extent of happiness, of which his nature is susceptible. When, on the other hand, he neglects to cultivate his mental faculties, to study their functions, relations, and natural laws, to draw from these sources rules for the guidance of his own conduct, and to act in conformity with these rules, he loses mental vigour, moral and intellectual enjoyment, and also external prosperity, and becomes liable to a host of other and contingent evils.

These examples will enable the reader to understand what is meant by the *independent operation* of the natural laws.

It has been remarked above, that God has attached to the action of natural objects consequences which Man cannot alter, but that the human constitution is adapted to natural agencies in such a manner, that by acting in accordance with them we may reap enjoyment, and by conduct in opposition to them we shall bring upon ourselves suffering. I regard the consequences of acting in the latter way as not only inevitable, *but pre-ordained by the Divine Mind* for a purpose: that purpose appears to be to deter intelligent beings from infringing the laws instituted by God for their welfare, and to preserve order in the world. When people think of physical laws, they generally perceive the consequences of these to be natural and inevitable; but they do not sufficiently reflect upon *the intentional pre-ordainment* of the consequences, as a warning or instruction to intelligent beings for the regulation of their conduct. It is the omission of this element that renders of so little use the knowledge of the natural laws which is actually possessed. The popular interpretations of Christianity have thrown the public mind so widely out of the track of God's natural providence, that *His object or purpose* in this pre-ordainment is rarely

thought of; and the most flagrant, and even deliberate infractions of the natural laws, are spoken of as mere acts of imprudence, without the least notion that the infringer is contemning a rule deliberately framed for his guidance by Divine wisdom, and enforced by Divine power.

In considering *moral* actions, on the contrary, the public mind leaves out of view *the natural and inevitable*. Being accustomed to regard human punishment as arbitrary, and capable of abeyance or alteration, it views in the same light the inflictions asserted to take place under the natural moral law, and does not perceive *Divine pre-ordainment and purpose* in the natural consequences of such moral actions. The great object which I have had in view in the present work is to show that this notion is erroneous, and that to the infringement of *every* natural law there is attached a pre-ordained natural consequence, which Man can neither alter nor evade.

To express this idea correctly, a term is required—something between simple "consequence" and "punishment." The former fails to convey my idea in its totality, and the latter adds something to distort it. I find it difficult to discover an appropriate word, but hope that the foregoing explanation will render the idea itself comprehensible.

A plausible objection to the views now stated has been based on the assertion that circumstances occasionally occur in which it is virtuous to set the physical and organic laws at defiance—as when a man rushes into the water to rescue a drowning fellow-creature, or on a railroad-track to remove from it a child, or deaf or blind person, who, but for such assistance, would be smashed to pieces by an advancing train. The benevolent agents in such enterprises occasionally lose their own lives, either saving or not those of the objects of their generous care; and it is argued, that in these instances we applaud the self-devotion which set at nought the physical action of the waves and the train, and risked life to perform a disinterested act of humanity.

But these cases are no exceptions to my doctrine that

even virtuous aims do not save us from the consequences of disregarding the natural laws. A few explanations will, I hope, remove the difficulty apparently presented by these and similar instances.

Unless the benevolent actors are able successfully to encounter the waves and escape the train, there is little chance of their realising their generous intentions, or accomplishing the objects of their solicitude. Obedience to the physical laws until they succeed is indispensable, otherwise both they and those whom they try to save will perish, and so the calamity will be aggravated.

No man, for example, is justifiable in leaping into the water even to rescue a fellow-creature, unless he is confident that, by his skill in swimming, or by the aid of a boat or other mechanical means at his command, he can comply with the physical law which regulates floatation. If he do go into the flood deliberately, and with the knowledge that he cannot perform the conditions of that law, he commits suicide. If, under the impulse of generous emotion, he plunges into the water, miscalculating his strength and skill, and is overcome; although we may admire and applaud his humane intention, we must lament the mistake he made in the estimate of his ability to swim. In the case of the railway train, if the kind and disinterested adventurer, after removing his fellow-creature from the rail, is himself overtaken by the engine and killed; while we give the tribute of our esteem to his humanity, we must regret his miscalculation. In no case is it possible to set the physical laws at defiance with impunity. Cases, such as those before alluded to, may occur, in which, with probability of success on our side, it may be justifiable to risk the sinister influence of a physical or organic law for the sake of a moral object of paramount importance: but even in such instances we are bound to use every possible precaution, and to make every possible effort to obey those laws; because our success in attaining the object pursued will depend on the extent of our obedience. We cannot escape their influence, if we do in-

fringe them; and if, while saving a fellow-creature, we perish ourselves, our object will be only half attained.

I have endeavoured to exhibit the administration of the present world in a light calculated to arrest attention, and to draw towards it that degree of consideration to which it is entitled. This proceeding will be recognised as the more necessary, if a principle, largely insisted on in the following pages, shall be admitted to be sound—viz., that religion operates on the human mind, in subordination, and not in contradiction, to its natural constitution. If this view be correct, it will be indispensable that all the *natural conditions* required by the human constitution as preliminaries to moral and religious conduct be complied with, *before* any purely religious teaching can produce its full effects. If, for example, an ill-constituted brain is unfavourable to the appreciation and practice of religious truth, it is not an unimportant inquiry, whether any, and what, influence can be exercised by human means in improving the size and proportions of the mental organs. If certain physical circumstances and occupations—such as insufficient food and clothing, unwholesome workshops, dwelling-places, and diet, and severe and long-protracted labour—have a natural tendency, in consequence of their influence on the nervous system in general, and on the brain in particular, to blunt all the higher feelings and faculties of the mind, and if religious emotions cannot be experienced with full effect by individuals so situated, the ascertainment, with a view to removal, of the nature, causes, and effects of these impediments to holiness, is not a matter of indifference. This view has not been systematically adopted and acted on by the religious instructors of mankind in any age, or any country; and, in my humble opinion, for these reasons: that the state of moral and physical science did not enable them either to appreciate its importance, or to carry it into effect; and that their own dogmas led them to undervalue the influence of natural forces on human wellbeing. By presenting Nature in her simplicity and strength, a new impulse and direction may

perhaps be given to their understandings; and they may be induced to consider whether their universally-confessed failure to render men as virtuous and happy as they desired, may not, to some extent, have arisen from their non-fulfilment of the natural conditions instituted by the Creator as preliminaries to success. They have complained of war waged, openly or secretly, by philosophy against religion; but they have not duly considered whether religion itself warrants them in treating philosophy and all its dictates with neglect, in their instruction of the people. True philosophy is a revelation of the Divine Will manifested in nature; it harmonizes with all truth, and cannot, with impunity, be neglected.

If we can persuade the people that the course of nature, which determines their condition at every moment of their lives, "is the design—law—command—instruction (any word will do), of an all-powerful, though unseen Ruler, it will become a religion with them; obedience will be felt as a wish and a duty, an interest and a necessity." The friend from whose letter I quote these words adds, "But can you persuade mankind thus? I mean, can you give them a *practical conviction?*" I answer—In the present unsatisfactory condition of things, the experiment is, at least, worth the trying, for the purpose of investing the ordinary course of providence with that degree of sanctity and reverence which can be conferred on it only by treating it as designedly fitted to instruct, benefit, and delight us.

These views will be better understood and appreciated after perusing the subsequent chapters, the object of which is to unfold and apply them; the aim of these introductory remarks being merely to prepare the reader for travelling over the more abstruse portions of the work with a clearer perception of their scope and tendency.

CHAPTER I.

ON NATURAL LAWS.

In natural science, three subjects of inquiry may be distinguished: 1*st*, What exists? 2*dly*, What is the use of what exists? and, 3*dly*, Why was what exists constituted such as it is?

It is matter of fact, for instance, that arctic regions and the torrid zone exist; that a certain kind of moss is abundant in Lapland in winter,—that the rein-deer feeds on it, and enjoys health and vigour in situations where most other animals would die; that camels exist in Africa,—that they have broad hoofs, and stomachs fitted to retain water for a considerable time,—and that they flourish amid arid tracts of sand, where the rein-deer would hardly live for a day. All this falls under the inquiry, What exists?

In contemplating these facts, the understanding is naturally led to infer that one object of the Lapland moss is to feed the rein-deer; and that broad feet have been given to the camel to qualify it to walk on sand, and a retentive stomach to fit it for arid places in which water is found only at wide intervals. By these arrangements, the rein-deer and camel are fitted to assist Man. These conclusions result from inquiries into the uses or purposes of what exists; and such inquiries constitute legitimate exercises of the human intellect.

But, further, we may ask, Why were animals formed of organised matter? Why were trackless wastes of snow and

burning sands called into existence? Why were all the elements of nature created such as they are? These are inquiries why what exists was made such as it is; or into the will of the Deity in creation.

Now, Man's perceptive faculties are adequate to the first inquiry, and his reflective faculties to the second: but it may well be doubted whether he has powers suited to the third. My investigations are confined to the first and second, and I do not discuss the third.

The Creator has bestowed on physical nature, on Man and on the animals, definite constitutions, which act according to fixed laws. A *law of nature* is, as I have said, a fixed mode of action; it implies a subject which acts, and that the actions or phenomena of that subject take place in an established and regular manner; and this is the sense in which I shall use the phrase when treating of physical substances and beings. Water, for instance, when at the level of the sea, and cooled to 32° of Fahrenheit's thermometer, freezes or becomes solid; when, under a certain pressure, it is heated to 212° of that instrument, it rises into vapour or steam. Here water is the substance, and the freezing and rising in vapour are the phenomena presented by it; and when we say that they take place according to a law of nature, we mean only that these modes of action appear, to our intellects, to be established in the very constitution of the water and in its natural relationship to heat; and that the processes of freezing and rising in vapour always occur when, in the same circumstances, the temperature of the water is 32° and 212°.

The points chiefly to be kept in view are, 1*st*, That all substances and beings have received definite natural constitutions; 2*dly*, That every mode of action which is inherent in the constitution of the substance or being, may be said to take place according to a natural law; and, 3*dly*, That the modes of action are universal and invariable wherever and whenever the substances or beings are found in the same circumstances. For example, water

boils at the same temperature in China, in France, in Peru, and in England; and there is no exception to the regularity with which it undergoes the change, *when all its other conditions are the same.* This qualification, however, must constantly be attended to; as it must be in all departments of science. If water be carried to the top of a mountain 10,000 feet high, it will boil at a far lower temperature than 212°; but this also takes place according to fixed and invariable laws. The atmosphere exerts a pressure on water: at the level of the sea the pressure is everywhere nearly the same, and in that situation the boiling point is the same all over the world; but on the top of a high mountain the pressure is much less, and the water, not being held down by so great a power of resistance, rises as vapour at a lower temperature than 212°. But this change of phenomena does not indicate a change in the constitution of the water, but only a variation in the circumstances in which it is placed; and hence it is not correct to say, that water boiling on the tops of high mountains at a lower temperature than 212° is an exception to the general law of nature. There are no exceptions to the laws of nature; the Creator is too wise and too powerful to make imperfect or inconsistent arrangements. The error is in the human mind inferring the law to be, that water boils at 212° at every altitude; when the real law is, that it boils at that temperature under the pressure which occurs *at the level of the sea* in all countries,—and that it boils at a lower temperature the higher it is carried, because there the pressure of the atmosphere is diminished.*

Intelligent beings are capable of observing nature, and of modifying their actions. By means of their mental faculties, the laws imposed by the Creator on physical substances be-

* The correct scientific formula is, that "the pressure of the atmosphere is not always the same at the same place, but is found by the barometer to vary within the limits of one-tenth of the whole pressure. This difference affects the boiling point to the extent of 4½°. Thus, when the height of the mercury in the barometer is expressed by the

come known to them, and, when perceived, constitute laws to them by which to regulate their conduct. For example, it is a physical law that boiling water destroys the muscular and nervous systems of man. This is the result of the constitution of the body, and the relation established between it and heat; and man cannot alter or suspend the law. But whenever the relation, and the consequences of disregarding it, are perceived, the mind is prompted to avoid infringement, in order to avert the torture attached by the Creator to the disorganisation of the human body by heat.

Similar views have long been taught by philosophers and divines. Bishop Butler, in particular, says:—"An Author of nature being supposed, it is not so much a deduction of reason as a matter of experience, that we are thus under his government; under his government in the same sense as we are under the government of civil magistrates; because the annexing pleasure to some actions, and pain to others, in our power to do or forbear, and giving notice of this appointment beforehand to those whom it concerns, *is the proper formal notion of government.* Whether the pleasure or pain which thus follows upon our behaviour be owing to the Author of nature's acting upon us every moment in which we feel it, or to his having at once contrived and executed his own part

numbers in the first column, water boils at the temperatures placed against them in the second column.

Barometer in inches of mercury.	Water boils.
27·74	208°
28·29	209
28·84	210
29·41	211
29·92	212
30·60	213

"It appears from this table, that for every inch of variation in the barometer, the boiling point of water varies 1·76°; and consequently a rise or fall in the barometer of 0·1 inch raises or lowers the boiling point 0·176°. On this account the pressure of the atmosphere must be attended to in fixing the boiling point of water on thermometers. Water boils at 212° only when the pressure of the atmosphere is equivalent to a column of 29·92 inches of mercury.

"The pressure of the atmosphere will be greatest at the level of the sea, and will diminish as we ascend to any height above it."

in the plan of the world, makes no alteration as to the matter before us. For, if civil magistrates could make the sanctions of their laws take place without interposing at all after they had passed them; without a trial, and the formalities of an execution: if they were able to make their laws execute themselves, or every offender to execute them upon himself,—we should be just in the same sense under their government then, as we are now; but in a much higher degree, and more perfect manner. Vain is the ridicule with which one foresees some persons will divert themselves, upon finding lesser pains considered as instances of Divine punishment. There is no possibility of answering or evading the general thing here intended, without denying all final causes. For, final causes being admitted, the pleasures and pains now mentioned must be admitted too, as instances of them. And if they are; if God annexes delight to some actions and uneasiness to others, with an apparent design to induce us to act so and so, then He not only dispenses happiness and misery, but also rewards and punishes actions. If, for example, the pain which we feel upon doing what tends to the destruction of our bodies,—suppose upon too near approaches to fire, or upon wounding ourselves,—be appointed by the Author of nature, to prevent our doing what thus tends to our destruction; this is altogether as much an instance of his punishing our actions, and consequently of our being under his government, as declaring, by a voice from heaven, that if we acted so He would inflict such pain upon us, and inflicting it whether it be greater or less." *

If, then, the reader keep in view that God is the creator; that nature, in the general sense, means the world which He has made, and, in a more limited sense, the particular constitution which He has bestowed on any special object of which we may be treating; that the *laws of nature* are the established modes in which the phenomena of any object, or the constitutional actions of any creature, exhibit

* Butler's Analogy, Part I., chap. ii. The remarks of other philosophers on the laws of nature will be found in the APPENDIX, No. II.

themselves; and that an obligation is imposed on intelligent beings to act in conformity with nature,—he will be in no danger of misunderstanding my meaning.*

As every natural object has received a definite constitution, in virtue of which it acts in a particular way, there must be as many natural laws as there are distinct modes of action of substances and beings, viewed by themselves. And moreover, as substances and beings stand in certain relations to each other, and modify each other's action in an established and definite manner according to that relationship (pressure, for instance, modifying the effect of heat upon water), there must be also as many laws of nature as there are *relations* between different substances and beings. The practical rules deducible from these laws will become more precise and explicit in proportion as the laws themselves are understood; but I do not expect that any degree of knowledge of these laws will ever supersede the necessity for accurate observation and reflection in Man. There is, for example, a definite constitution and function assigned by nature to the lungs; certain gaseous fluids have been created, some of which when breathed vivify the blood and strengthen all the organs, and others carbonise the blood, and weaken them. The human intellect is called on by Nature to attend to these gases, so as to place the lungs in circumstances to inhale the pure and wholesome, and to avoid the deleterious air; and hence, although this constitution and relationship of things is constant and invariable, human conduct must intelligently vary, in order to adapt itself to the actual circumstances. In the meanwhile, however, as the natural laws are invariable, Man suffers from not accommodating his conduct to them, even although his omission be the result of ignorance.

It is impossible, in the present state of knowledge, to elucidate all these laws: numberless years may elapse before they shall be discovered; but we may investigate some of the most familiar and striking of them. Those which most

* See above, p. 21.

readily present themselves bear reference to the great classes into which the objects around us may be divided—namely, Physical, Organic, and Intelligent. I shall therefore at present consider the physical laws, the organic laws, and the laws which characterise intelligent beings.

1*st*, The Physical Laws embrace all the phenomena of mere matter: a heavy body, for instance, when unsupported, falls to the ground with a certain force, accelerated in proportion to the distance which it falls and its own density; and this motion is said to take place according to the law of gravitation. An acid applied to a vegetable blue colour converts it into red; and this is said to take place according to a chemical law.

2*dly*, Organised substances and beings stand higher in the scale of creation, and have properties peculiar to themselves. They act, and are acted upon, in conformity with their constitution, and are therefore said to be subject to a peculiar set of laws, termed the Organic. The characteristic of this class of objects is, that the individuals of it derive their existence from other organised beings, are nourished by food, and go through a regular process of growth and decay. Vegetables and animals are the two great subdivisions of it. The organic laws are different from the merely physical: a stone, for example, does not spring from a parent stone; it does not take food; it does not increase in vigour for a time, and then decay and suffer dissolution; all which processes characterise vegetable substances and animal beings.

The organic laws are superior to the merely physical. A living man, or animal, may be placed in an oven, along with the carcass of a dead animal, remain exposed to a degree of heat which will bake the dead flesh, and yet come out alive, and not seriously injured. The dead flesh being mere physical matter, is liable to easy decomposition by heat; while the living animal is able, by its organic qualities, to resist, to a certain extent, its influence. The organic laws, then, are the established modes according to which the phenomena of the production, health, growth, decay, and death

of vegetables and animals take place. In the case of each animal or vegetable of the same kind, their action is always the same in the same circumstances. Animals are the chief objects of my present observations.

3*dly*, Intelligent beings stand yet higher in the scale than merely organised matter, and embrace all animals that have distinct consciousness, from the lowest of the inferior creatures up to Man. The two great divisions of this class are *intelligent and animal*—and *intelligent and moral* creatures. The dog, horse, and elephant, for instance, belong to the former class, because they possess some degree of intelligence, and certain animal propensities, but no moral feelings; Man belongs to the second, because he possesses all the three. Their various faculties have received a definite constitution, and stand in determinate relationship to external objects: for example, a healthy palate cannot feel wormwood sweet, nor sugar bitter; a healthy eye cannot see a rod partly plunged in water straight—because the water so modifies the rays of light, as to give to the stick the appearance of being crooked; a healthy sentiment of benevolence cannot feel gratified with murder, nor a healthy conscientiousness with fraud. As, therefore, the mental faculties have received a precise constitution, have been placed in fixed and definite relations to external objects, and act regularly, we speak of their acting according to laws, and call these the Moral and Intellectual Laws, inherent in the constitutions of these beings.

Several important facts strike us very early in attending to the natural laws: viz., 1*st*, Their independence of each other; 2*dly*, That obedience to each of them is attended with its own good, and disobedience with its own evil consequences; 3*dly*, That they are universal, unbending, and invariable in their operation; 4*thly*, That those of things external to Man are in harmony with his constitution.

1. The mutual *independence* of the natural laws may be illustrated thus:—A ship floats because the part of it immersed displaces a quantity of water equal in weight to its whole

mass, leaving the remaining portion above the fluid. A ship, therefore, will float on the surface of the water as long as these physical conditions are observed, although the men in it should infringe the moral laws—although, for example, they should rob, murder, blaspheme, and commit every species of debauchery; and it will sink whenever the physical conditions are subverted, however strictly the crew and passengers may obey the moral laws. In like manner, a man who swallows poison which destroys the stomach or intestines will die, just because an organic law has been infringed, and because it acts independently of others; although he should have taken the drug by mistake, or be the most pious and charitable Christian on earth. Or, thirdly, a man may cheat, lie, steal, tyrannise, and, in short, break a great variety of the moral laws, and nevertheless, if he sedulously observe the organic laws of temperance and exercise, he may be fat and rubicund; while, on the other hand, a person who neglects these may pine in disease, and be racked with torturing pains, although, at the very moment, he may be devoting his mind to the highest duties of humanity. The power of Man to modify the influence of one natural law by availing himself of another, will be considered in a subsequent chapter.

2. *Obedience to each law is attended with its own agreeable, and disobedience with its own disagreeable, consequences.* Thus, the mariners who preserve their ship by complying with the physical laws, reap the advantage of sailing in safety; and those who permit a departure from them, suffer by the ship's sinking. People who obey the moral law enjoy the intense internal delights that spring from active moral faculties; they render themselves, moreover, objects of affection and esteem to moral and intelligent beings, who, in consequence, reciprocate with them many other gratifications. Those who disobey that law are tormented by insatiable desires, which, from the nature of things, cannot be gratified; they suffer by the perpetual craving of whatever portion of moral sentiment they possess for higher enjoyments which are

never attained; and they are objects of dislike and malevolence to men of similar dispositions to theirs, who inflict on them the evils which their own provoked propensities incite them to administer. Those who obey the organic laws enjoy health and vigour of body, and buoyancy of mind; while those who break them are visited by sickness, feebleness, languor, and pain.

3. The natural laws are *universal, invariable, and unbending.* When the physical laws are infringed in China or Kamtschatka, there is no instance of a ship floating there more than in England; and when they are observed, there is no instance of a vessel sinking in any one of these countries more than another. There is no example of men, in any country, enjoying the mild and generous internal joys, and the outward esteem and love, that attend obedience to the moral law, while they give themselves up to the dominion of brutal propensities. There is no example, in any latitude or longitude, or in any age, of men who entered life with a constitution in harmony with the organic laws, and who continued to obey these laws, being, *in consequence* of this obedience, visited with pain and disease; and there are no instances of men who were born with constitutions marred by disease, and who have lived in habitual disobedience to the organic laws, enjoying that sound health and vigour of body which is the consequence of obedience.

4. The natural laws are *in harmony with the constitution of man.* If ships in general had sunk when they were staunch, strong, and skilfully managed, this would have outraged the perceptions of reason; but as they float, the physical law is in this instance in harmony with the moral and intellectual law. If men who rioted in drunkenness and debauchery had thereby established health and increased their happiness, this, again, would have been at variance with our intellectual and moral perceptions; but the opposite result is in harmony with them.

It will be subsequently shown, that our moral sentiments desire universal happiness. If the physical and organic laws

are constituted in harmony with them, it ought to follow that the natural laws, when obeyed, will conduce to the happiness of the moral and intelligent beings who are called on to observe them; and that the evil consequences resulting from infringement of them will be calculated to enforce stricter obedience, for the advantage of these creatures themselves. According to this view, when a ship sinks in consequence of a plank starting, the disaster is intended to impress upon the spectators the absolute necessity of having every plank strong and secure before going to sea, this being a condition indispensable to safety. When sickness and pain follow a debauch, the object of the suffering is to urge a more scrupulous obedience to the organic laws, that the individual may escape premature death, which is the inevitable consequence of too great and continued disobedience to these laws,—and enjoy health, which is the reward of the opposite conduct. When discontent, irritation, hatred, and other mental annoyances, arise out of infringement of the moral law, this suffering is calculated to induce the offender to return to obedience, that he may enjoy the calm and pure pleasures which naturally flow from morality.

When the transgression of any natural law is excessive, and so great that return to obedience is impossible, one purpose of death, which then ensues, may be to deliver the sufferer from protracted misery, which could do him no good. Thus, when, from infringement of a physical law, a ship sinks at sea, and leaves men immersed in water, without the possibility of reaching land, their continued existence in that state would be one of cruel suffering: it is therefore advantageous to them to have their lives extinguished at once by drowning, and to be thus withdrawn from further agony. In like manner, if a man in the vigour of life so far infringe any organic law as to destroy the function of a vital organ—such as the heart, the lungs, or the brain—it is better for him to have his life cut short, and his pain ended, than to have it protracted under the tortures of an organic existence, without lungs, without a heart, or without a brain,

if such a state were possible—which, for this wise reason, it is not.

I do not intend to predicate anything concerning the absolute perfectibility of man by obedience to the laws of nature. Benevolent design in the system of sublunary creation, so far as we perceive it, is undeniable. Paley says: "Nothing remains but the supposition, that God, when He created the human species, wished their happiness; and made for them the provision which He has made, with that view, and for that purpose. The same argument may be proposed in different terms, thus: Contrivance proves design, and the predominant tendency of the contrivance indicates the disposition of the designer. The world abounds with contrivances; and all the contrivances which we are acquainted with are directed to beneficial purposes."* Many of the contrivances of the Creator for effecting beneficial purposes have been discovered by philosophers: but, so far as I am aware, no one has adverted to the foregoing principles, as those according to which these contrivances operate; so that nothing like a systematic view of the moral government of the world has hitherto been presented to mankind.

It may be asked, Whether mere *knowledge* of the natural laws is sufficient to ensure observance of them? Certainly not. Mere knowledge of anatomy does not enable one to perform skilfully a surgical operation, nor of music to play on a violin. Practical training, and the aid of every motive that can interest the feelings, are necessary to lead men to obey the natural laws. Religion, in particular, may furnish motives highly conducive to this obedience. I recognise explicitly the importance of religion to the welfare of society and to that of the individual. Active religious feelings dispose a man to venerate, and submit himself to, those moral and physical laws instituted by the Creator, on which his own happiness and that of society depend. They prompt him also to adoration and gratitude, emotions highly influential in the right ordering of human conduct. But it

* Moral Philosophy, B. ii. chap. v.

must never be forgotten, that although mere knowledge is not all-sufficient, it is a primary and indispensable requisite to regular observance; and that it is as impossible effectually and systematically to obey the natural laws without knowing them, as it is to perform any other complicated and important duty in ignorance of its principles and practical details. Some persons are of opinion that Christianity alone suffices for our guidance in all practical virtues, without knowledge of, or obedience to, the laws of nature; but from this notion I respectfully dissent. One reason why vice and misery do not diminish as the number of sermons preached against them increases seems to be, that the natural laws are too much overlooked, and are very rarely considered as having any relation to human conduct. Before religion can yield its full practical fruits in this world, it must be wedded to a philosophy founded on these laws; it must borrow light and strength from them, and in return must communicate its powerful sanction towards enforcing obedience to their dictates.

In connection with this subject it is proper to repeat, that I do not maintain that the world is arranged on the principle of benevolence exclusively: my idea is, that it is constituted in harmony with the whole faculties of Man; the moral sentiments and intellect holding the supremacy. What is meant by creation's being constituted in harmony with the whole faculties of Man, may be thus illustrated. Suppose that we should see two men holding a third in a chair, and a fourth drawing a tooth from his head:—While we contemplated this bare act, and knew nothing of the intention with which it was done, and of the consequences that would follow, we should set it down as purely cruel, and say, that although it might accord with the propensity which prompts men to inflict pain and destroy, it could not harmonise with benevolence. But, when we were told that the person in the chair was a patient, and the operator a dentist, and that the object was to deliver the patient from violent torture, we should then perceive that an operation attended with pain had been used as a means to accomplish a benevolent pur-

pose,—or, in other words, that the operator had acted under the guidance of moral sentiment and intellect,—and we should approve of his conduct. If the world had been created on the principle of benevolence exclusively, the toothach could not have existed; but, as pain does exist, a mental faculty, called by phrenologists *destructiveness*, has been given, to place Man in harmony with its existence, when used for a benevolent end.

To apply this illustration to the works of Providence, I humbly suggest it as probable, that if we knew *thoroughly* the design and whole consequences of such institutions of the Creator as are attended with pain (including death itself), we should find that its infliction is used as a *means*, subservient to benevolence and justice, to arrive at an end in harmony with the moral sentiments and intellect; in short, that no institution of the Creator has pure evil for its object. "In maturity of sense and understanding," says Lord Kames, "benevolence appears more and more; and beautiful final causes are discovered in many of Nature's productions that formerly were thought useless, or perhaps hurtful; and the time may come—we have solid ground to hope that it *will* come—when doubts and difficulties about the government of Providence will all of them be cleared up, and every event be found conducive to the general good."*

The opposite doctrine, that there are institutions of the Creator which have suffering for their exclusive object, is clearly untenable; for this would be ascribing malevolence to the Deity. As, however, the existence of pain is undeniable, it is equally impossible to believe that the world is arranged on the principle of benevolence exclusively. The view now presented makes no attempt to explain why pain or evil came to exist, because I consider this inquiry to surpass the limits of the human understanding. It offers an explanation, however, of one use which pain serves—that of enforcing obedience to the natural laws; and it shows that the human mind is constituted in harmony with this order of creation.

* Sketches of the History of Man, B. iii. Sk. iii. chap. ii.

CHAPTER II.

ON THE CONSTITUTION OF MAN, AND ITS RELATIONS TO EXTERNAL OBJECTS.

Let us next consider the constitution of man, and try to discover how far the external world is arranged with wisdom and benevolence in regard to it.

Bishop Butler, in the Preface to his Sermons, says:—

"It is from considering the relations which the several appetites and passions in the inward frame have to each other, and, above all, the supremacy of reflection or conscience, that we get the idea of the system or constitution of human nature. And from the idea itself it will as fully appear, that this our nature, *i.e.* constitution, is adapted to virtue, as from the idea of a watch it appears that its nature, *i.e.* constitution or system, is adapted to measure time. . . .

"Mankind has various instincts and principles of action, as brute creatures have; some leading most directly and immediately to the good of the community, and some most directly to private good.

"Man has several which brutes have not; particularly reflection or conscience, an approbation of some principles or actions, and disapprobation of others.

"Brutes obey their instincts or principles of action, according to certain rules; suppose the constitution of their body, and the objects around them.

"The generality of mankind also obey their instincts and principles, all of them; those propensions we call good, as

well as the bad, according to the same rules—namely, the constitution of their body, and the external circumstances which they are in.

"Brutes, in acting according to the rules before mentioned, their bodily constitution and circumstances, act suitably to *their whole nature.*

"Mankind also, in acting thus, would act suitably to their whole nature, if no more were to be said of man's nature than what has been now said; if that, as it is a true, were also a complete, adequate account of our nature.

"But that is not a complete account of man's nature. Somewhat further must be brought in to give us an adequate notion of it; namely, *that one of those principles of action, conscience, or reflection*, compared with the rest, as they all stand together in the nature of man, *plainly bears upon it marks of authority over all the rest, and claims the absolute direction of them all*, to allow or forbid their gratification;—a disapprobation of reflection being in itself a principle manifestly superior to a mere propension. And the conclusion is, that to allow no more to this superior principle or part of our nature than to other parts; to let it govern and guide only occasionally in common with the rest, as its turn happens to come, from the temper and circumstances one happens to be in,—*this is not to act conformably to the constitution of man:* neither can any human creature be said to act conformably to his constitution of nature, unless he allows to that superior principle the absolute authority which is due to it."

The present treatise is in a great measure founded on the principles here suggested.

SECT. I.—MAN CONSIDERED AS A PHYSICAL BEING.

The human body consists of bones, muscles, nerves, and blood-vessels, besides organs of respiration, of nutrition, of reproduction, of feeling, and of thought. These are all composed of physical elements, and, to a certain extent, are subjected to the physical laws of creation. By the law of

gravitation, the body, when unsupported, falls to the ground, and is liable to be injured. By another law, excessive cold freezes, and excessive heat dissipates, its fluids; and life, in either case, is extinguished.

To discover the real effect of the physical laws of nature on human happiness, we need to understand, 1*st*, The physical laws themselves, as revealed by the phenomena of natural substances; these laws, so far as discovered, are treated of in works of natural philosophy, natural history, chemistry, and their subordinate branches: 2*dly*, The anatomical and physiological constitution of the human body: and, 3*dly*, The adaptation of the physical laws to this constitution. These expositions are necessary to ascertain the extent to which it is possible for Man to place himself in accordance with the physical laws, so as to reap advantage from them; and also to determine how far the sufferings which he endures may be ascribed to the inevitable operation of those laws, and how far to his ignorance and infringement of them. In the subsequent pages, this subject will be treated somewhat in detail: at present I confine myself to a single instance, as an illustration of the mode in which the investigation will be conducted.

By the law of gravitation, bodies tend towards the centre of the earth. Some of the advantages of this law are, that things, when properly supported, remain at rest; that walls, when sufficiently thick and perpendicular, stand firm and erect; that water descends from high places, turns mill-wheels in its course, and sets in motion the most stupendous and useful machinery; and that ships float steadily with part of their hulls immersed in water and part rising above it, exposing their masts and sails to catch the breeze.

The Creator has bestowed on Man bones, muscles, nerves, and intellectual faculties, constructed on admirable principles, which place him in harmony with this law, and enable him to adapt his movements to its influence. Intellect also enables him to perceive the existence of the law, its modes of operation, the relation between it and himself, the beneficial

consequences of observing this relation, and the painful results of disregarding it.

When a person falls over a precipice, and is maimed or killed,—when a ship springs a leak and sinks,—or when a reservoir of water breaks its banks and ravages a valley,—the evils proceed from the operation of this law; but, in judging of its utility to Man, we should consider all its beneficial consequences, and also inquire whether, when productive of evil, the effects could or could not have been avoided, by a due exercise of mental and physical power.

By pursuing this course, we shall arrive at sound conclusions concerning the adaptation of the human mind and body to the physical laws of creation. The subject is too extensive to be here prosecuted in its details, and, besides, I am incompetent to do it justice; but what has been said will serve to elucidate the principle advocated. The more profoundly any one inquires, the more firm will his conviction become, that, in these relations, provision has been made by the Creator for human happiness, and that the evils which arise from them are attributable in a great degree to Man's failure to apply his powers to the promotion of his own enjoyment.

SECT. II.—MAN CONSIDERED AS AN ORGANISED BEING.

Man is an organised being, and subject to the organic laws. An organised being, as was formerly said, is one which derives its existence from a previously existing organised being; which subsists on food; which grows, attains maturity, decays, and dies. To render an organised being perfect in its kind, the germ from which it springs must be complete in all its parts, and sound in its whole constitution. This is the *first* organic law. If we sow an acorn in which some vital part has been destroyed, the seedling plant, and the full-grown oak, if it ever attain to maturity, will be deficient in the elements which are wanting in the germ; if we sow an acorn entire in its parts, but only half ripened, or damaged in its texture by damp or other causes,

the seedling oak will be feeble, and liable to premature decay. A similar law holds good in regard to man.

A *second* organic law is, that the organised being, the moment it is ushered into life, and so long as it continues to live, must be supplied with food, light, air, and every other physical element which Nature has made requisite for its support, in due quantity, and of the kind suited to its particular constitution. Obedience to this law is rewarded with a vigorous and healthy development of its powers, and in animals with a pleasing consciousness of existence, and aptitude for the performance of their natural functions; disobedience leads to feebleness, general imperfection, pain, or early death. A single fact will illustrate this observation. At the meeting of the British Association held in Edinburgh in 1834, there was read an Abstract, by Dr Joseph Clarke, of a Register kept in the Lying-in Hospital of Dublin, from the year 1758 to the end of 1833; from which it appeared that, in 1781, when the hospital was imperfectly ventilated, every sixth child died within nine days after birth, of convulsive disease; and that, after means of thorough ventilation had been adopted, the mortality of infants, within the same time, in five succeeding years, was reduced to about one in twenty.*

A *third* organic law, applicable to Man, is, that he shall duly exercise his organs; this condition being an indispensable requisite to health. The reward of obedience to this law is enjoyment in the very act of exercising the functions, pleasing consciousness of existence, and the acquisition of numberless gratifications and advantages, of which labour, or the exercise of our powers, is the procuring means: disobedience is followed by derangement and sluggishness in the functions, general uneasiness or positive pain, and the denial of gratification to numerous faculties.

Directing our attention to the constitution of the human body, we perceive that digestive organs are given to Man

* Report of Proceedings of the British Association, 1834, p. 685.

for his nutrition, and that innumerable vegetable and animal productions are placed around him, capable of being assimilated into his system; also that the power of reproduction is bestowed on him, with intellect to enable him to discover and obey the conditions necessary for the transmission of a healthy organic constitution to his descendants.

Without attempting to expound minutely the organic structure of Man, or to trace in detail its adaptation to his external condition,* I shall offer some observations in support of the proposition, that the due exercise of the osseous, muscular, and nervous systems, under the guidance of intellect and moral sentiment, and in accordance with the physical laws, contributes to human enjoyment; and that the neglect of this exercise, or an abuse of it, whether by carrying it to excess, or by conducting it in opposition to the moral, intellectual, or physical laws, is followed by pain.

The Divine Being has denied to the inferior animals faculties capable of forming and executing schemes of intelligent design; but He has constituted physical nature with such a relation to their wants, that the earth produces, without their care or culture, successive crops of the food necessary for their subsistence. He has also denied to them the power of combining natural productions into raiment to shelter themselves from the cold; but, as a compensation, He has clothed them in fur, wool, hair, or feathers. Judging from these and other displays of Divine power and adaptation, we are authorised to infer that the same Great Designer, had He seen proper, could have so constituted the earth that perennial crops of corn and fruit, of every species suitable for the sustenance of Man, should have spontaneously sprung from the ground; and could also have clothed him in a vestment adapted to his structure. And yet these gifts have been withheld. Man must plough, and sow, and reap, other-

* The reader will find many valuable illustrations of these subjects in Dr Andrew Combe's treatises on "Physiology applied to Health and Education," on "Digestion and Diet," and on "The Management of Infancy."

wise his supplies of nutritive substances will speedily fail. He must fabricate apparel for himself, or go unclothed. But in compensation, God has bestowed on him physical and mental powers which find scope and enjoyment in labour directed by intelligence; and in accordance with this constitution, He has presented him with fields having rich productive qualities, and seeds capable of growth and extensive multiplication. He has added constructive talents, and materials which may be spun and woven into convenient and beautiful apparel; and has left Man to provide supplies for his own wants from the resources thus placed at his disposal. At the first view, we might consider the animals as more fortunate than Man; but when we learn to regard his nature and its adaptations in the light of a sound philosophy, his position in the order of creation is recognised to be far superior to theirs. The exertions which he is called on to make furnish him with pleasing occupation. This becomes the more apparent when we discover that the fertility of the earth, and the demands of the body for food and clothing, are so benevolently adapted to each other, that, with rational restraint on population, a few hours' labour each day, from every one capable of working, would suffice to furnish all with every commodity that could really add to enjoyment.

In many of the tropical regions of the globe, where a high atmospheric temperature diminishes muscular energy, the fertility and productiveness of the soil are so largely increased that far less labour suffices for the raising of food. Less labour, also, is required to provide habitations and raiment. In the colder latitudes, the earth is more sterile, and the piercing frosts render a thicker covering necessary to protect the body; but there muscular energy is more abundant, to meet the greater demands that are made upon it.

Further, the food afforded by the soil in each climate appears to be adapted to maintain in health the organic constitution of the people, and to supply the degree of muscular energy necessary for the particular wants of the locality. In the Arctic Regions, no farinaceous food ripens; but on the

question being put to Sir John Richardson, how he, accustomed to the bread and vegetables of temperate countries, was able to relish the purely animal diet on which he lived when visiting the shores of the Polar Sea with Sir John Franklin, he replied, that the effect of the extreme dry cold to which he and his companions were exposed—living, as they did, in the open air—was to produce a desire for the most stimulating food they could obtain; that bread in such a climate was not only not desired, but comparatively impotent, as an article of diet; that pure animal food, and the fatter the better, was the only sustenance that maintained the tone of the system; but that when it was abundant (and the quantity required was much greater than in milder latitudes), a delightful vigour and buoyancy of mind and body were enjoyed. In beautiful harmony with the wants of the human frame, these regions abound, during summer, in countless herds of deer, in rabbits, partridges, ducks, and other sorts of game, and also in fish; and the flesh of these, dried, constitutes delicious food in winter, when the earth is wrapped in one wide mantle of snow.

Among the Greenlanders and other Esquimaux tribes, nothing is so much relished as the fat of the whale, the seal, or the walrus: a tallow-candle and a draught of train-oil are regarded as dainties, while a piece of bread is spit out with strong indications of disgust.

In Scotland, the climate is moist and moderately cold; the greater part of the surface is mountainous, and well adapted for the rearing of cattle and sheep; while a certain portion consists of fertile plains, fitted for the growth of farinaceous food. If the same law holds in this country, the diet of the people should consist of animal and farinaceous aliment, with a predominance of the former; and on such food, accordingly, the Scotsman thrives best. As we proceed to warmer latitudes, we find in France the soil and temperature less congenial to sheep and cattle, but more favourable to corn and wine; and the Frenchman flourishes in health on less of animal food than would be requisite to preserve

the Scottish Highlander, in the recesses of his mountains, in a strong and alert condition. From one of a series of interesting letters on the agriculture of France by M. Lullin de Chateauvieux, published in the "Bibliothèque Universelle," it appears that, when he wrote, the consumption of beef in that country, relatively to the population, was only one-sixth of what it is in England.* The plains of Hindostan are too hot for the extensive rearing of sheep and oxen, but produce rice and vegetable spices in abundance; and the native is healthy, vigorous, and active when supplied with rice and curry, and becomes sick when obliged to live chiefly on animal diet. He is supplied with less muscular energy by this species of food; but his soil and climate require less laborious exertion to maintain him in comfort, than do those of Britain, Germany, or Russia.

So far, then, the external world appears to be wisely and benevolently adapted to the organic system of Man; that is, to his nutrition, and to the development and exercise of his corporeal organs. The natural law appears to be, that every one who desires to enjoy the pleasures of health, must expend in labour the energy which the Creator has infused into his limbs. A wide choice is left to Man as to the *mode* in which he shall exercise his nervous and muscular systems: The labourer, for example, digs the ground, and the squire engages in the chase; both pursuits exercise the body. The penalties for neglecting this law are imperfect digestion, disturbed sleep, debility, bodily and mental lassitude, and, in extreme cases, confirmed bad health and early death. The consequences of over-exerting these systems are exhaustion, mental incapacity, the desire for strong artificial stimulants (such as ardent spirits), general insensibility, grossness of feeling and perception, with disease and shortened life.

Society has not recognised this law, and, in consequence, the higher orders despise labour and suffer the first evil, while the lower orders are oppressed with toil and undergo

* Quarterly Journal of Agriculture, vol. i. p. 390; Edin. 1829.

the second. These natural consequences serve to provide motives for obedience to the law; and when they are discovered to be inevitable, men will no longer shun labour as painful and ignominious, but resort to it as a source of pleasure and advantage.*

SECT. III.—MAN CONSIDERED AS AN ANIMAL, MORAL, AND INTELLECTUAL BEING.

I have adverted to the bodily constitution of Man, which is essentially animal; but I observe, in the third place, that Man, viewed in regard to his mental constitution, is an animal, moral, and intellectual being. To discover the adaptation of the mental parts of his nature to his external circumstances, we must first know what are his various animal, moral, and intellectual powers themselves. Phrenology gives us a view of them, drawn from observation; and as I have verified the inductions of that science, so as to satisfy myself that it is the best exposition of the nature of Man which has yet been given, I adopt its classification of faculties as the basis of the subsequent observations. One great advantage presented by Phrenology, is the light which it throws on the *natural* constitution of the mind. Philosophers and divines have long disputed about the number and functions of the human faculties; and while each assumed his own consciousness as the standard of nature, and occupied himself chiefly with observations on its phenomena, as his means of study, there could be no end to their discussions. But the organs of the mind can be seen and felt, and their size estimated, and the mental manifestations also that accompany them can be observed in an unlimited number of instances; so that, assuming the existence of organs, it is clear that a far higher degree of certainty in regard to the *natural* endowments of the mind may be attained by studying them, than by any means previously

* See APPENDIX, No. III.

applied. It is disputed, also, whether Man be now in possession of the same qualities as those with which he was created: but if mental organs exist at all, they have been bestowed by the Creator; and if we discover their functions, and distinguish their uses from their abuses, we shall obviously obtain clearer views of what God has instituted, and of the extent to which Man himself is chargeable with error and perversion, than could be arrived at by the means previously employed. Such conclusions, if correctly drawn, will possess an irresistible authority—that of the record of nature itself. If, therefore, any reader be disposed to question the existence of such qualities in Man as I am about to describe,—to do so consistently, he should be prepared to deny, on reasonable grounds, that mental organs exist. If he allows their existence, he is bound to show that the observations of phrenologists in regard to them are incorrect, or their inferences regarding their functions erroneously deduced, before he can consistently condemn them for using the facts and inferences as ascertained truths. He is, of course, at liberty to reject both, if, through aversion to the study, or any other cause, he is unacquainted with the evidence, or if he considers it insufficient; but as phrenologists do not ask him, while in that state of mind, to concede their principles, he will see the fairness of not expecting them to renounce their own convictions out of deference to his non-recognition of their truth. According to Phrenology, then, as held by me, the human faculties are the following.*

* The organs are double, each faculty having two, lying in corresponding situations of the hemispheres of the brain. Their *situations* are indicated by the marked bust, and by the engravings in phrenological books.

Order I. FEELINGS.

Genus I. PROPENSITIES—*Common to Man with the Lower Animals.*

THE LOVE OF LIFE.—Organ not indicated on the bust.

1. AMATIVENESS—Produces sexual love.
2. PHILOPROGENITIVENESS.—*Uses:* Affection for young and tender beings.—*Abuses:* Pampering and spoiling children.
3. CONCENTRATIVENESS.—*Uses:* It concentrates and renders permanent emotions and ideas in the mind.—*Abuses:* Morbid dwelling on internal emotions and ideas, to the neglect of external impressions.

3 *a.* INHABITIVENESS.—*Uses:* It produces the desire of permanence in place.—*Abuses:* Aversion to move abroad.

4. ADHESIVENESS.—*Uses:* Attachment; friendship and society result from it.—*Abuses:* Clanship for improper objects, attachment to worthless individuals. It is generally strong in women.
5. COMBATIVENESS.—*Uses:* Courage to meet danger and overcome difficulties; tendency to defend, to oppose and attack, and to resist unjust encroachments.—*Abuses:* Love of contention, and tendency to provoke and assault. This feeling obviously adapts Man to a world in which danger and difficulty abound.
6. DESTRUCTIVENESS.—*Uses:* Desire to destroy noxious objects, animate and inanimate, and to use for food animals in which life has been destroyed.—*Abuses:* Cruelty, murder, desire to torment, tendency to passion, rage, and harshness and severity in speech and writing. This feeling places man in harmony with death and destruction, which are woven into the system of sublunary creation.

6 *a.* APPETITE FOR FOOD.—*Uses:* Nutrition.—*Abuses:* Gluttony and drunkenness.

7. SECRETIVENESS.—*Uses:* Tendency to restrain within the mind the various emotions and ideas that involuntarily present themselves, until the judgment has approved of giving them utterance; it is simply the propensity to conceal, and is an ingredient in prudence.—*Abuses:* Cunning, deceit, duplicity and lying.

8. ACQUISITIVENESS.—*Uses:* Desire to possess, and tendency to accumulate; the sense of property springs from it.—*Abuses:* Inordinate desire of property, selfishness, avarice, theft.
9. CONSTRUCTIVENESS.—*Uses:* Desire to build, and to construct works of art.—*Abuses:* Construction of engines to injure or destroy with cruelty, and fabrication of objects to deceive mankind.

Genus II. SENTIMENTS.

(1.) *Sentiments common to Man with some of the Lower Animals.*

10. SELF-ESTEEM.—*Uses:* Self-respect, self-interest, love of independence, personal dignity.—*Abuses:* Pride, disdain, overweening conceit, excessive selfishness, love of dominion.
11. LOVE OF APPROBATION.—*Uses:* Desire of the esteem of others, love of praise, desire of fame or glory.—*Abuses:* Vanity, inordinate ambition, thirst for praise independently of praiseworthiness.
12. CAUTIOUSNESS.—*Uses:* It gives origin to the sentiment of fear, the desire to shun danger, and circumspection; and it is an ingredient in prudence. The sense of security springs from its gratification.—*Abuses:* Excessive timidity, poltroonery, unfounded apprehensions, despondency, melancholy.
13. BENEVOLENCE.—*Uses:* Desire of the happiness of others, compassion for the distressed, universal charity, mildness of disposition, and a lively sympathy with the enjoyment of all animated beings.—*Abuses:* Profusion, injurious indulgence of the appetites and fancies of others, facility of temper.

(2.) *Sentiments Proper to Man.*

14. VENERATION.—*Uses:* Tendency to venerate or respect whatever is great and good; it gives origin to religious emotion.—*Abuses:* Senseless respect for unworthy objects consecrated by time or situation, love of antiquated customs, abject subserviency to persons in authority, superstitious awe. To these Mr Scott adds, "undue deference to the opinions and reasonings of men who are fallible like ourselves; the worship of false gods, polytheism, paganism, idolatry."
15. FIRMNESS.—*Uses:* Determination, perseverance, steadiness of purpose.—*Abuses:* Stubbornness, infatuation, tenacity in evil.
16. CONSCIENTIOUSNESS.—*Uses:* It gives origin to the sentiment of justice, a respect for rights, openness to conviction, the love of truth.—*Abuses:* Scrupulous adherence to noxious prin-

ciples when ignorantly embraced, excessive refinement in the views of duty and obligation, excess in remorse or self-condemnation.

17. HOPE.—*Uses:* Tendency to expect future good; it cherishes faith.—*Abuses:* Credulity with respect to the attainment of what is desired, absurd expectations of felicity not founded on reason.

18. WONDER.—*Uses:* The desire of novelty; admiration of the new, the unexpected, the grand, the wonderful, and extraordinary. —*Abuses:* Love of the marvellous and occult; senseless astonishment; belief in false miracles, in prodigies, magic, ghosts, and other supernatural absurdities.—*Note.* Veneration, Hope, and Wonder, combined, give origin to religion; their abuses produce superstition.

19. IDEALITY.—*Uses:* Love of the beautiful, desire of excellence, poetic feeling.—*Abuses:* Extravagant and absurd enthusiasm; preference of the showy and glaring to the solid and useful; a tendency to dwell in the regions of fancy, and to neglect the duties of life.

19 *a.* Unascertained; supposed to be connected with the sentiment of the Sublime.

20. WIT—Gives the feeling of the ludicrous, and disposes to mirth.

21. IMITATION—Copies the manners, gestures, and actions of others, and appearances in nature generally.

Order II. INTELLECTUAL FACULTIES.

Genus I. EXTERNAL SENSES.

FEELING or TOUCH.
TASTE.
SMELL.
HEARING.
SIGHT.

Uses: To bring Man into communication with external objects, and to enable him to enjoy them.—*Abuses:* Excessive indulgence in the pleasures arising from the senses, to the extent of impairing bodily heath, and debilitating or deteriorating the mind.

Genus II. KNOWING FACULTIES WHICH PERCEIVE THE EXISTENCE AND QUALITIES OF EXTERNAL OBJECTS.

22. INDIVIDUALITY—Takes cognisance of existence and simple facts.

23. FORM—Renders Man observant of form.

24. SIZE—Gives the idea of space, and enables us to appreciate dimension and distance.
25. WEIGHT—Communicates the perception of momentum, weight, and resistance; and aids equilibrium.
26. COLOURING—Gives perception of colours, their harmonies and discords.

Genus III. KNOWING FACULTIES WHICH PERCEIVE THE RELATIONS OF EXTERNAL OBJECTS.

27. LOCALITY—Gives the idea of relative position.
28. NUMBER—Gives the talent for calculation.
29. ORDER—Communicates the love of physical arrangement.
30. EVENTUALITY—Takes cognisance of occurrences or events.
31. TIME—Gives rise to the perception of duration.
32. TUNE—The sense of melody and harmony arises from it.
33. LANGUAGE—Gives facility in acquiring a knowledge of arbitrary signs to express thoughts, readiness in the use of them, and the power of inventing and recollecting them.

Genus IV. REFLECTING FACULTIES, WHICH COMPARE, JUDGE, AND DISCRIMINATE.

34. COMPARISON—Gives the power of discovering analogies, resemblances, and differences.
35. CAUSALITY—Traces the dependences of phenomena, and the relation of cause and effect.*

With some exceptions, where the evidence is still inconclusive, it has, in my opinion, been ascertained by observation that each of these faculties is connected with a particular portion of the brain, and that, other conditions being alike,

* In his "System of Phrenology," fifth edition, pp. 149, 285, 436, the author admits that some of the details of this classification (which is borrowed from Dr Spurzheim) are open to objection. The time does not seem to have yet arrived when a perfect arrangement and nomenclature of the mental faculties will be possible. Nevertheless, the classification here given will be found very convenient; and probably few intelligent persons who have had much experience of human character will dispute the existence of a great majority of the faculties enumerated, even if doubting the sufficiency of the evidence for their connection with those parts of the brain to which phrenologists assign them.—Ed.

the power of manifesting each bears a relation to the size of its organ. The organs differ in relative size in different individuals, and hence arise differences in talents and dispositions. This fact is of great importance in the philosophy of Man; and the circumstance of its having been unknown until Gall's discovery of the functions of the brain, is sufficient to explain the past barrenness of mental science, and to render probable the assertion that a great flood of light on this subject is now pouring forth on the world. These faculties are not all equal in excellence and authority; some are common to Man with the lower animals, and others are peculiar to Man. Before comparing the human mind with its external condition, therefore, it becomes an object of importance to discover the relative rank and authority of these different powers.

SECT. IV.—THE FACULTIES OF MAN COMPARED WITH EACH OTHER; OR, THE SUPREMACY OF THE MORAL SENTIMENTS AND INTELLECT.

According to the phrenological theory of human nature, the faculties are divided into Propensities common to Man with the lower animals; Sentiments common to Man with the lower animals; Sentiments proper to Man; and Intellect. Almost every faculty stands in a definite relation to certain external objects: when it is internally active, it desires these objects; when they are presented to it, they excite it to action, and delight it with agreeable sensations. Human happiness is resolvable into the gratification, and misery into the uneasiness, of one or more of our mental faculties, those of bodily sensation included. Every faculty is good in itself, but all are liable to be abused.

The faculties may act in a variety of combinations. First, The lower propensities may act by themselves, each seeking its own gratification, without transgressing the limits prescribed by enlightened intellect and the moral sentiments: this gratification is legitimate, and the fountain of much enjoyment. Secondly, The propensities may act in opposition to the dictates of the moral sentiments and intellect:

A merchant, for instance, by misrepresentation of the real qualities of his commodities, may obtain a higher price for them than if he spoke the truth; or, by depreciating unjustly the goods of a rival, he may attract that rival's customers to himself. By such conduct he would apparently benefit himself, but he would infringe the dictates of the moral sentiments and intellect; in other words, he would do an injury to his customer or his rival, proportionate to the undue benefit which he attempted to secure to himself. All such manifestations of the propensities are abuses, and, when traced to their results, are found to ultimately injure the man who practises them, even more than him against whom they are directed. Thirdly, The moral sentiments may act by themselves, each seeking its own gratification: thus benevolence may prompt a person to do acts of kindness, and veneration to perform exercises of devotion. When the gratification sought by any one or more of the sentiments does not infringe the duties prescribed by all the other faculties, the actions are proper. But any one moral sentiment, acting by itself, may run into excess—benevolence, for instance, may lead to profusion, or to the practice of generosity at the expense of justice; veneration may prompt a person to frequent churches to the neglect of his domestic duties; and so forth.

Thus there is, first, a wide sphere of action provided for the propensities, in which each may find its gratification without transgressing the limits of morality; and this is a good and proper action: secondly, there is ample scope for the exercise of each of the moral and intellectual faculties, without infringing the dictates of any of the other faculties; and this action also is good. But, on the other hand, the propensities, and also the moral and intellectual faculties, may act, singly or in groups, in opposition to the dictates of all the other powers enlightened by knowledge and acting in combination; and all such actions are wrong. Hence, right conduct is *that which is approved of by the whole faculties, sufficiently enlightened, and acting in harmonious combination.*

When conflict, however, arises between the desires of the different faculties, the dictates of the moral and intellectual, as superior in kind to those of the animal faculties, must be obeyed, otherwise misery will ensue; and this I call the supremacy of the moral sentiments and intellect.

When conflict arises, I do not consider any of the moral sentiments and intellectual faculties singly, or even the whole of them collectively, as sufficient to direct conduct by their mere impulsive suggestions. To fit them to discharge this important duty, they must act in harmonious combination with each other, and be illuminated by knowledge of physical and moral science, and of the nature and legitimate spheres of action of the propensities. The sources of knowledge are observation, experience, and reflection; also instruction by books, teachers, and all other means which the Creator has provided for the improvement of the human mind. Whenever the dictates of the moral and intellectual faculties, thus combined and enlightened, oppose the solicitations of the propensities, the latter must yield,—otherwise, by the constitution of nature, evil will inevitably ensue. This is what I mean by nature's being constituted in harmony with the whole faculties of Man; the moral sentiments and intellect, in case of conflict, holding the supremacy.

Phrenology shows that different men possess the faculties in different degrees: I do not mean, therefore, to say, that in each individual, whatever may be the proportions of his organs, the dictates of *his* animal, moral, and intellectual powers, acting in harmonious combination, are rules of conduct not to be disputed. On the contrary, in most men one or several of the organs are so deficient or so excessive in size, in proportion to the others, that their perceptions of duty will differ from the highest standards. The dictates, therefore, of the animal, moral, and intellectual powers, acting in harmonious combination, which constitute rules of conduct, are the collective dictates of the best-endowed and best-balanced minds, illuminated by the greatest knowledge.

Let us now consider the faculties themselves. First, I

shall view the propensities acting alone, uninfluenced by the moral and intellectual powers. There is ample scope for their proper activity in this way; but the great distinction between the animal faculties and the powers proper to Man is, that the former do not prompt us to seek the welfare of mankind at large: their object is chiefly the preservation of the individual himself, his family, or his tribe; while the latter have the general happiness of the human race, and our duties to God, as their ends.

THE LOVE OF LIFE, and THE APPETITE FOR FOOD, clearly have reference to the preservation of the individual alone.

Even the domestic affections, amiable and respectable as they undoubtedly are, have self-gratification as their chief object. The first three propensities, AMATIVENESS, PHILOPROGENITIVENESS and ADHESIVENESS, or the group of the domestic affections, desire a conjugal partner, offspring, and friends; the obtaining of these affords them delight—the removal of them occasions pain. But they do not take an interest in the welfare of their objects on account of those objects. He who loves from amativeness alone, is sensual, faithless, and negligent of the happiness of his partner. He who combines with this propensity, benevolence, veneration, justice, and intellect, will disinterestedly promote the real happiness of the object of his affection.

To realise happiness, the whole faculties must be gratified harmoniously, or at least the gratification of one or more of them must not offend the dictates or desires of any of the others. For example, suppose the domestic affections of a woman to be highly interested in some one, and strongly to desire an alliance with him, but that he is improvident and immoral, and altogether an object of whom the higher faculties, acting by themselves, cannot approve;—then, if marriage take place, bitter days of repentance will necessarily follow, when the lower feelings languish through satiety, and his qualities give offence to the moral powers. If, on the other hand, the domestic affections be guided to an object pleasing to the higher sentiments, these themselves will be

gratified; they will double the delights afforded by the inferior faculties, and render the enjoyment permanent.

The love of children, springing from philoprogenitiveness, is like that of the miser for his gold; an interest in the object for the sake of the gratification which it affords, without desiring or distinguishing what is good for the object on its own account. This is recognised by Sir Walter Scott, in his character of Elspat: "Her ardent, though selfish affection for her son, incapable of being qualified by a regard for the true interests of the unfortunate object of her attachment, resembled the instinctive fondness of the animal race for their offspring; and, diving little farther into futurity than one of the inferior creatures, she only felt that to be separated from Hamish was to die."*

In Man, this faculty generally acts along with benevolence; and a disinterested desire for the happiness of the child mingles with, and elevates, its mere instinctive impulses: but the sources of these affections are different, their degrees vary in different persons, and their ends also are dissimilar. This is exemplified every day by the conduct of mothers, who, although actuated by an intense love of their offspring, nevertheless spoil them by vicious indulgence, and render them miserable. If philoprogenitiveness were capable, singly, of desiring and perceiving the real welfare of children, the treatment of them would, in all cases, be rational and beneficial, in proportion to the vigour and activity of this faculty; but the fact is otherwise.

The same observation applies to the affection proceeding from ADHESIVENESS. When this faculty acts alone, it desires, for its own satisfaction, a friend to be loved; but it is not, from its own impulses, interested in the welfare of its object. It feels attached to him as a sheep does to its fellows of the flock; but if benevolence do not act along with it, it does nothing for the happiness of that friend. Both adhesiveness and philoprogenitiveness tend to excite benevolence towards

* The Highland Widow, chap. iv.

their objects; when this sentiment, however, is naturally very weak, the propensities cannot render it vividly active. The horse feels melancholy when his companion is removed; but the feeling appears to be simply one of uneasiness at the absence of an object which gratified his adhesiveness. His companion may have been led to a richer pasture, or introduced to more agreeable society; yet this does not assuage the distress suffered by him at his removal: his tranquillity is restored only by time causing the activity of adhesiveness to subside, or by the substitution of another object on which it may expend itself. In human nature, the effect of the faculty, when acting singly, is similar. If two persons, elevated in rank, and possessed of affluence, have each adhesiveness, self-esteem, and love of approbation strong, with benevolence and conscientiousness moderate, it is obvious that, while both are in prosperity, they may really like each other's society, and feel a reciprocal attachment, because there will be mutual sympathy in their adhesiveness, and the self-esteem and love of approbation of each will be gratified by the rank and creditable circumstances of the other. But imagine one of them to fall into misfortune, and to cease to be an object gratifying to self-esteem and love of approbation; suppose that he becomes a poor friend instead of a rich and influential one; the harmony between their selfish faculties will be broken, and then adhesiveness in the one who remains rich will transfer its affection to another person who may at once gratify it, and supply agreeable sensations to self-esteem and love of approbation—to a genteel friend, in short, who will look well in the eye of the world.

Much of this conduct occurs in society, and the complaint is very ancient, that the storms of adversity rend friendships asunder, as the wintry blasts strip from the tree the leaves that adorned it in summer; and in consequence many moral sentences have been pointed, and epigrams finely turned, on the selfishness and corruption of poor human nature. But such friendships are attachments founded on the lower

feelings, which, by their constitution, do not regard the welfare of others; and the desertion complained of is the natural result of the principles on which both parties acted during the gay hours of prosperity. If we look at a cast of the head of Sheridan, we shall perceive large organs of adhesiveness, self-esteem, and love of approbation, with deficient causality, and moderate conscientiousness. He had large organs of individuality, comparison, secretiveness, and imitation, which gave him talents for observation and display. When these earned him a brilliant reputation, he was surrounded by friends, and he himself probably felt attachment in return. But he was deficient in morality, and not disposed to love his friends with a true, disinterested, and honest regard: he abused their kindness; and when he sank into poverty and wretchedness, and ceased to be an honour to them, all who were constituted like himself deserted him. But the whole connection was founded on selfish principles: Sheridan honoured them, and they flattered Sheridan; and the abandonment was the natural consequence of the cessation of gratification to their selfish feelings. I shall by-and-by speak of the sources of a loftier and purer friendship, and its effects. Some of his intimates, who acted from adhesiveness combined with the higher feelings, remained attached to him through all his misfortunes.

Combativeness and destructiveness also, when acting alone, or in combination with the other propensities, do not in their own nature seek the happiness of others. If aggression be committed against us, combativeness shows the front of opposition and repels the attack; destructiveness inflicts pain or injury, to make the aggressor desist, or it takes vengeance on him for the offence. Both feelings are obviously very different from benevolence. I do not say that in themselves they are bad; on the contrary, they are necessary, and, when legitimately employed, highly useful; but still their first and instinctive object is the preservation of self.

Secretiveness suppresses the display of feelings when im-

proper to be manifested, and restrains the utterance of thoughts which ought to be concealed. It also gives the desire to find out secrets, in order to guard against hostile plots or designs. In itself, it does not desire, in any respect, the benefit of others.

The next faculty is ACQUISITIVENESS. It desires to possess property, is pleased with accumulating, and suffers uneasiness in being deprived of its acquisitions; but its object is not the happiness of others. Like all the other faculties, however, it is highly useful; for even benevolence cannot give away until acquisitiveness has gained. There are friendships, particularly among mercantile men, founded on adhesiveness and acquisitiveness, just as in fashionable life they are founded on adhesiveness and love of approbation. Two men fall into a course of dealing, by which each reaps profit from transactions with the other: this leads to intimacy; adhesiveness mingles its influence, and a feeling of attachment is produced. The moment, however, that the acquisitiveness of the one suffers the least inroad from that of the other, and their interests clash, they are apt, if no higher principle unite them, to become bitter enemies. While these fashionable and commercial friendships last, the parties may profess reciprocal esteem and regard, and, when a rupture takes place, the one who is depressed or disobliged may recall these expressions, and charge the other with hypocrisy. In truth, however, they were not uttered in sincerity. From adhesiveness and gratified love of approbation or acquisitiveness, each probably felt something which he fancied to be disinterested friendship; but if each would honestly probe his own conscience, he would be obliged to acknowledge that the whole basis of the connection was selfish, and that the result was what should be expected by every man who places his reliance for happiness chiefly on the lower feelings.

SELF-ESTEEM is, in its very essence and name, selfish: it is the love of ourselves and the esteem of ourselves *par excellence*.

LOVE OF APPROBATION, although many think otherwise,

does not in itself desire the happiness of others. Its object is applause to ourselves, to be esteemed ourselves; and if it prompt us to do services, or to say agreeable things to others, this is not from love of *them*, but for the sake of obtaining the self-gratification afforded by their good opinion.

If we are acquainted with a person who has committed an error,—who has done or said something that the public disapproves of, and which we see to be wrong,—benevolence and conscientiousness would prompt us to lay before our friend the very head and front of his offending, and conjure him to forsake his error, and make amends; love of approbation, on the other hand, would simply desire to gain his applause by making ourselves agreeable to him, without looking further. If ill regulated, it would either render us averse to speak to him at all on the subject, lest he should be offended; or prompt us to extenuate his fault, to gloss it over, and to represent it either as a simple mistake, or as extremely trivial. If we analyse the motive which prompts to this course, we shall find that it is not love of our friend or consideration for his welfare, but fear lest, by our presenting to him disagreeable truths, he should feel offended with us, and deprive us of the gratification afforded by his good opinion.

Another illustration may be given. A manufacturer in a country-town, having acquired a considerable fortune by trade, applied part of it in building a princely mansion, which he furnished in the richest style of fashion. He invited his customers, near and distant, to visit him, and introduced them into an apartment that dazzled them with splendour. This excited their curiosity and wonder—which was precisely the effect he desired; he then led them over his whole suite of rooms, and displayed before them his grandeur and taste. In doing so, he affected to act as if he were conferring a gratification on them, and believed that he was filling their minds with an intense admiration of his greatness; but the real effect was very different. The motive of his conduct was not love of them, or regard for their happiness or welfare;

it was not benevolence to others that prompted him to build the palace; it was not veneration; it was not conscientiousness. The fabric sprang from self-esteem and love of approbation, combined, no doubt, with considerable intellect and ideality. In leading his humble brethren in trade through the princely halls, over the costly carpets, and amid the gilded mirrors and rich array that everywhere met their eyes, he exulted in the consciousness of his own importance, and asked for their admiration, not as an expression of respect for any real benefit conferred upon them, but as the much relished food of his own selfish vanity.

But what would be the effect of this display on those to whom it was made? To gain their esteem or affection, it would have been necessary to manifest towards them benevolence, respect, and justice; for to cause another to love us, we must make him the object of our moral sentiments, which have his good and happiness for their aim. Here, however, these were not the inspiring motives, and the want of them would be instinctively felt. The visitors who possessed any shrewdness would ascribe the whole exhibition to the vanity of the owner, and they would either pity, or envy and hate him: if their own moral sentiments predominated, they would pity him; if their self-esteem and love of approbation were paramount, they would envy his magnificence, and be offended at his superiority in luxury, and would hate him. Only the silliest and the vainest would be at all gratified; and their satisfaction would arise from the feeling, that they could now return to their own circle, and boast how great a friend they had, and in how grand a style they had been entertained—this display being a direct gratification to their own self-esteem and love of approbation, by identifying themselves with him. Even this pleasure would exist only where the admirer was so humble in rank as to entertain no idea of rivalship, and so limited in intellect and morality as not to perceive the worthlessness of the qualities by which he was captivated.

To be successful in gratifying our friends, we must keep

our own selfish faculties in due subordination, and pour forth copious streams of real kindness from the higher sentiments, animated and elevated by intellect; and all who have experienced the heartfelt joy and satisfaction attending entertainments conducted on this principle, will never quarrel with the homeliness of the fare, or feel uneasy about the absence of fashion in the service.

Cautiousness, the next faculty, is a sentiment instituted to prompt us to shun danger. Acting apart from the moral sentiments, it seeks to protect self from evil; and this is its essential object.

This terminates the list of Feelings common to Man with the lower animals,* and which, as we have seen, when acting impulsively, either singly or in combination with each other, apart from the moral powers, do not seek the welfare of others as their aim, but have self-preservation and self-gratification as their leading objects. They are given for the protection and advantage of our individual nature, and, when manifested in their proper spheres, are highly useful, and also respectable, viewed with reference to that end. Their action is then also in harmony with the dictates of the moral sentiments; but they are sources of innumerable evils when allowed to usurp the ascendency over these powers, and to become the main-springs of our conduct. Their action appears to be the same in kind in Man and in the lower animals. We do not regard a cow in suckling her calf, or a dog in defending his bone, as manifesting moral feelings. We approve of these and other manifestations of the propensities in the lower animals, because they are suited to their nature and circumstances; but the notion of morality springs from the higher sentiments, which are superior in kind to the propensities.

* Benevolence is stated in the works on Phrenology as common to man with the lower animals; but in these creatures it appears to produce rather passive meekness and good nature, than desire for each other's happiness. In the human race, this last is its proper function; and viewed in this light, I treat of it as exclusively a human faculty.

I now proceed to notice the higher Sentiments, and to point out their objects and relations.

Benevolence has direct reference to other beings. If they are miserable, it feels compassion for them, and desires to relieve them. It purely and disinterestedly desires the happiness of its objects; it loves for the sake of the person beloved: if he be well, and the sunbeams of prosperity shine warmly around him, it exults and delights in his felicity. It desires a diffusion of joy, and renders the feet swift and the arms strong in the cause of charity and love. By the beneficence of the Creator, it is, when gratified, the source of great enjoyment to its possessor; insomuch that some authors have asserted that men are benevolent for the sake of this pleasure. But this is not the case. The impulse is instinctive, and acts before the intellect has anticipated the result.

Veneration also has reference to others. It looks up with a pure and elevated emotion to the beings to whom it is directed, whether God or our fellow-men, and delights in the contemplation of their great and good qualities. Combined with moderate self-esteem, it renders self humble and submissive. God is its highest object.

Hope spreads its gay wing in the boundless regions of futurity. It expects good, "incites us, indeed, to aim at a good which we can live without;" but its influence is soft, soothing, and happy. When combined with the propensities, it expects good to self; when with the moral sentiments, it anticipates universal happiness.

Ideality delights in perfection from the pure pleasure of contemplating it. So far as it is concerned, the picture, the statue, the landscape, or the mansion, on which it abides with the intensest rapture, is as pleasing although the property of another as if all its own. It is a spring that is touched by the beautiful wherever it exists; and hence its means of enjoyment are as unbounded as the universe.

Wonder seeks the new and the striking, and is delighted

with change; but there is no desire of appropriation to self in its longings.

Conscientiousness stands in the midway between self and others. It implies the existence of both selfish and social tendencies in man, for one of its functions is to regulate their contending solicitations. It is a regulator both of our animal and moral feelings, and, aided by intellect, it serves to point out the limits which they must not pass. It desires to do to others as we would have them to do to us, and is the guardian of the welfare of our fellow-men, while it sanctions and supports our personal feelings within the bounds of justice. It is a noble feeling; and the mere consciousness of its being bestowed upon us ought to bring home to our minds an intense conviction that the Author of the universe, from whom it springs, is at once wise and just.

Among the sentiments now enumerated, benevolence, veneration, and conscientiousness are distinguishable as *the moral sentiments*. These, like the others, may be erroneously directed, or may act in excess, and in either case may give rise to abuses, such as profusion, superstition, and excessive scrupulosity. But the grand distinction between them and the propensities is this: The propensities, acting even legitimately—singly, or in combination with each other, but not in combination with the moral sentiments—have individual interests for their direct objects, and do not actively desire the happiness of other beings for the sake of these beings themselves: the actions of the lower animals afford illustrations in point. The moral powers, on the other hand, acting in harmonious combination with each other, and directed by enlightened intellect, desire the welfare or honour of other beings as their direct object: the purest and the best of men afford in their conduct examples of the truth of this remark. It is not this distinction alone, however, which confers the moral character on some of the sentiments. There is an inherent difference in kind between them and the propensities, which is felt by those who possess both. In cases of conflict, the superiority is recog-

nised as belonging to the moral faculties by their natural constitution.*

Intellect is universal in its applications. It may become the handmaid of any of the faculties; it may devise a plan to murder or to bless, to steal or to bestow, to rear up or to destroy; but, as its proper use is to observe the different objects of creation, to mark their relations, and to direct the propensities and sentiments to their proper and legitimate enjoyments, it has a boundless sphere of action, and, when properly exercised and applied, is a source of high and inexhaustible delight.

* See an able essay on this subject in the Phrenological Journal, vol. iii. p. 491, "On the Phrenological Theory of Virtue;" republished in the American Phrenological Journal, vol. iii. No. 3. The author of the essay states clearly and correctly the distinction between *virtue* and *merit*. "We hold," says he, "*virtue* to be a term expressive of the relation of the sentiments of benevolence, veneration, and conscientiousness, to certain actions contemplated by us, in which the enlightened exercise of these sentiments is involved." "The idea of *merit* emanates solely from the operation of the selfish feelings and desires." "It is evident that conscientiousness can see no *merit* in being just, for inclination can never perceive merit in its own gratification. In the same way, veneration can discover no *merit* in yielding that deferential homage to superiority which is its natural tribute. And benevolence is equally blind to the perception of merit in being kind and charitable; yet merit is a word which, in reference to justice, veneration, and charity, conveys a distinct idea, and we are bound, therefore, to account for its existence." "When we contemplate the noble Regulus eloquently pleading for the very decree which must consign him to the fury of his enemies," "it is in virtue neither of conscientiousness nor veneration that his great merit is perceived, because these faculties discover nothing in the action beyond the simple obedience to their own dictates. But cautiousness, with its dark forebodings of pain, and misery, and death,—and adhesiveness, with its yearning after the objects of its fond desire,—tell us of the terrible assaults which conscientiousness and veneration must have sustained in maintaining their supremacy. And the different degrees of merit which different minds will discover in this action, will be in exact proportion to the vigour, in these minds, of the two higher sentiments which produced the action, in relation to the power of the two selfish feelings by which it would have been opposed." "The clamorous outcries of these selfish feelings tell us of the snares with which conscientiousness and veneration were in this instance environed, and it is therefore we attach *merit* to the supremacy they maintained."

The world is so constituted, that all necessary and really advantageous gratifications of the propensities are compatible with the dictates of the moral sentiments and intellectual powers; so that scope is afforded to all the faculties to act in harmonious combination. As a counterpart to this arrangement, all gratifications of the propensities which are disapproved of by the higher powers, are, in their ultimate consequences, hurtful to the individual himself. In like manner, all manifestations of the moral sentiments, when acting in harmonious combination and directed by enlightened intellect, although they tend directly to the welfare of others, indirectly contribute also to the enjoyment of the virtuous agent.

Keeping in view the great difference now pointed out between the lower and the higher faculties, we shall find that three consequences follow from the constitution of these powers.

First, All the faculties, when in excess, are insatiable, and, from the constitution of the world, never can be satisfied. They indeed may be soon satisfied on any particular occasion. Food will soon blunt the appetite; success in speculation will render acquisitiveness quiescent for the moment; a triumph will satisfy for the time self-esteem and love of approbation; a long concert will fatigue the faculty of tune; and a tedious discourse will afflict causality. But after repose they will all *renew their solicitations*. They must all, therefore, be regulated in their action, particularly the propensities and lower sentiments. These, having self for their primary object, and being blind to consequences, do not set limits to their own indulgence; and, when allowed to exceed the boundaries prescribed by the superior sentiments and intellect, lead directly to misery to the individual, and injury to society. If, for example, a man whose supreme happiness springs from philoprogenitiveness, is led by the predominance of that propensity, uncontrolled by the higher powers, to act at variance with the natural laws on which the health, intelligence, and virtue of his children depend, he will, by treating them thus irrationally,

defeat his own desires. He will be in constant danger of anguish from the illness or death of his children, or from their foolish or undutiful conduct. Besides, philoprogenitiveness, acting in each parent along with self-esteem and love of approbation, would desire that *his* children should possess the highest rank and greatest wealth, and be distinguished for the most splendid talents; but the highest, the greatest, and the best of any qualities, necessarily imply the existence of inferior degrees, and are attainable only by a few. In like manner, acquisitiveness desires wealth; but as nature affords annually only a limited supply of its elements, and as human labour and skill, the means of its creation, also have bounds, it is evident that if all strive to acquire a large amount, many must be disappointed. From the constitution of nature, disappointment to the greater number is inevitable. These animal faculties, therefore, must be restrained in their desires, and directed in the pursuit of gratification, by the moral sentiments and by intellect, otherwise they will inevitably lead to disappointment.

Secondly, The animal propensities being inferior in their nature, their gratifications, when not approved of by the moral sentiments and intellect, leave a painful feeling of discontent and dissatisfaction in the mind, occasioned by the secret disapproval of their excessive action by the higher feelings. Suppose, for example, a young person to commence active life with ardent wishes to acquire wealth, and to attain honour and distinction. Imagine him to rise early and sit up late, and to put forth all the energies of a powerful mind in buying and selling, and becoming rich. It is obvious that benevolence, veneration, and conscientiousness would have but a small share in prompting him to this course of action, and that in pursuing it they would have received little direct gratification. They must have anxiously watched the animal faculties, longing for the hour when these should say, Enough; their whole occupation, in the mean time, being to restrain them from such gross excesses as would have defeated their own ends.

Suppose, then, this ambitious man to have reached the evening of life, and to look back on the pleasures and pains of his career; he must feel that there has been much of vanity and vexation of spirit. The highest of his faculties have not supplied the motives of his conduct, and have received no adequate satisfaction. If a man have, through life, aimed at acquiring reputation, he will find that the affection and esteem which he has gained will be in proportion to the degree in which he has manifested the higher faculties in his habitual conduct. If his acquaintances have seen him selfish in his pursuit of wealth, selfish in his domestic affections, selfish in his ambition; although he may have pursued his objects without positive encroachment on the rights of others, they will still look coldly on him—they will feel towards him no glow of affection, no elevated respect, and no hearty admiration. If acute, he will see and feel that this is the case, and the knowledge will be painful to him. But the fault is his own; love, esteem, and cordial regard arise, by the Creator's laws, from contemplating, not plodding, selfish faculties, but benevolence, veneration, and justice, as the motives of human conduct. He has reaped the natural produce of the soil which he cultivated, and of the seeds which he sowed.

Thirdly, The higher feelings, when acting in harmonious combination, and directed by enlightened intellect, have a boundless scope for gratification: their least indulgence is delightful, and their highest activity is bliss; they cause no repentance, leave no void, but render life a scene at once of peaceful tranquillity and of sustained felicity: and, what is of much importance, conduct proceeding from their dictates carries in its train the highest gratification to the animal propensities themselves, of which these are susceptible. At the same time, it must be remembered that the higher sentiments also err and lead to evil, when not regulated by enlightened intellect; that intellect, in its turn, must give due weight to the existence and desires of both the propensities and the sentiments, as elements in the human constitution,

before it can arrive at sound conclusions regarding conduct; and that rational actions and true happiness flow from the gratification of all the faculties *in harmony* with each other, —the moral sentiments and intellect, in cases of conflict, bearing the directing sway.

This doctrine may be shortly illustrated. Imagine a man to begin life with a thorough conviction that the moral sentiments are the superior powers, and that they and the propensities ought to act harmoniously together—the first effect would be to cause him to consider other men, and his Creator, as, besides himself, the objects of his regard. Benevolence would infuse into his mind the feeling that there are other human beings as dear to the Creator, and as much entitled to enjoyment, as himself; and that his duty is to seek no gratification to himself which is calculated to prove injurious to them, but, on the contrary, to act so as to confer on them, by his daily exertions, all the services in his power. Veneration would give a profound respect for the laws of God, and a full reliance on His power and wisdom that such conduct would in the end conduce to the highest gratification of all his faculties; it would inspire, also, an habitual respect for his fellow-men, as beings deserving his regard and deference. And lastly, conscientiousness would prompt him habitually to respect their rights.

Let us trace, then, the effects which, in this state of things, would be produced. Suppose a friendship formed by a man whose principles of conduct included benevolence: this man would desire his friend's welfare for the friend's sake. Next, veneration, acting along with intellect, would reinforce this love, by the conviction that it was entirely conformable to the law of God, and would be acceptable in His sight. It would also produce a habitual deference towards the friend himself, which would render his manner pleasing to the friend, and his deportment yielding and accommodating in all things proper to be forborne or done. Thirdly, conscientiousness, ever on the watch, would proclaim the duty of making no unjust demands on the good

nature of the friend, but of limiting the whole intercourse with him to an interchange of kindness, good offices, and reciprocal affection. Intellect, acting along with these sentiments, would point out, as an indispensable requisite to such an attachment, that the friend himself should be so far under the influence of the moral sentiments as to be able, in some degree, to satisfy them; for, if he were immoral, selfish, vainly ambitious, or, in short, under the habitual influence of the propensities and lower sentiments, it would be impossible for the man of pure and noble character to love or to respect him.

Let us now consider how far such a friendship would gratify the propensities. In the first place, how would adhesiveness rejoice in such an attachment! Because, if the intellect were convinced that the friend habitually acknowledged the supremacy of the higher sentiments, adhesiveness might pour forth all its ardour, and cling to its object with the closest bonds of affection. The friend would never encroach on us for evil, because his benevolence and justice would oppose this; he would not lay aside restraint, and break through the bonds of affection by undue familiarity, because veneration would forbid this; he would not injure us in our name, person, or reputation, because conscientiousness, veneration, and benevolence, all combined, would prevent such conduct. Here, then, adhesiveness freed from the fear of evil, of deceit, and of dishonour (because such a friend could not fall into dishonour), would be at liberty to take its deepest draught of affection: it would receive a gratification which would be unattainable if it acted only in combination with the purely selfish faculties. What delight, too, would such a friendship afford to self-esteem! There would be a legitimate approval of ourselves, arising from a survey of pure motives and just and benevolent actions. Love of approbation, also, would be gratified in the highest degree; for every act of affection, every expression of esteem, from such a friend, would be so purified by benevolence, veneration, and conscientiousness, that it would form the legitimate

food on which love of approbation might feast and be satisfied: it would fear no hollowness beneath, no tattling in absence, no secret smoothing over the surface for the sake of mere effect, no envyings, no jealousies. In a word, friendship founded on the higher sentiments as the ruling motives, would delight the mind with gladness and sunshine, and and harmoniously gratify all the faculties, animal, moral, and intellectual.

From this illustration, the reader will understand more clearly what I mean by the harmony of the faculties. The fashionable and commercial friendships of which I spoke, gratified adhesiveness, love of approbation, self-esteem, and acquisitiveness, but left out, as fundamental principles, all the higher sentiments. There was therefore, in those instances, a want of harmonious gratification to the whole faculties, which want gave rise to a feeling of the absence of full satisfaction; it permitted only a mixed and imperfect enjoyment while the friendship lasted, and induced a feeling of painful disappointment, or of vanity and vexation, when a rupture occurred. The error, in such cases, consists in founding attachment on the lower faculties (seeing that they, by themselves, are not calculated to form a stable basis of affection), instead of building it on them and the higher sentiments together, which afford a foundation that is at once real, lasting, and satisfactory. In complaining of the hollowness of attachments springing from the lower faculties exclusively, we are like men trying to erect a pyramid on its smaller end, and then speaking of the unkindness of Providence, and the hardness of their own fate, when it falls.

A similar examination of all other pleasures founded on the animal propensities chiefly, would exhibit similar results. Happiness, therefore, I repeat, results from the harmonious action of all the faculties; the moral sentiments and intellect, in cases of conflict, exercising the directing and controlling sway.

Many men, on arriving at the close of life, complain that

all its pursuits and enjoyments have proved to be vanity and vexation of spirit; but, to my mind, this is just an intimation that the plan of their lives has been selfish, and that they have sought for pleasure, not in the legitimate uses, but in abuses of their faculties. I cannot conceive that at the hour of death the mind should feel all acts of kindness done to others during life,—all exercises of devotion performed in a right spirit,—all deeds of justice executed,—all rays of knowledge disseminated,—as vain, unprofitable, and unsatisfying. On the contrary, such actions appear to me to be those which the mind would then rejoice to pass in review, as having constituted the occupation and enjoyment of life.

SECT. V.—THE FACULTIES OF MAN COMPARED WITH EXTERNAL OBJECTS.

Having considered Man as a *physical* being, and briefly adverted to the adaptation of his constitution to the physical laws of creation; having viewed him as an *organised* being, and traced the relations of his organic structure to his external circumstances; having taken a rapid survey of his *faculties* as an animal, moral, and intellectual being, with their uses and abuses; and having contrasted these faculties with each other, and discerned the supremacy, in cases of conflict, of the moral sentiments and intellect,—let us now proceed to compare his faculties with *external objects*, in order to discover what provision has been made by Providence for their gratification.*

Amativeness is a feeling obviously necessary for the continuance of the species, and one which, properly regulated, produces great enjoyment, in harmony with morality and reason:—opposite sexes exist to provide for its gratification.

Philoprogenitiveness is given,—and offspring exist.

* The nature and sphere of activity of the mental faculties is explained at length in my "System of Phrenology," to which I beg leave to refer. Here I can only indicate general ideas.

Concentrativeness is conferred,—and the other faculties are its objects.

Adhesiveness is given,—and friends and country exist.

Combativeness is bestowed,—and physical and moral obstacles exist, to meet and subdue which, courage is necessary.

Destructiveness is given,—and Man is constituted with carnivorous teeth and an omnivorous stomach, and animals to be killed and eaten exist. Besides, the whole combinations of creation are in a state of decay and renovation. In the animal kingdom almost every species of creature is the prey of some other; and the faculty of destructiveness places the human mind in harmony with this order of creation. Destruction makes way for renovation; the act of renovation furnishes occasion for the activity of our other powers; and activity is pleasure. That destruction is a natural institution, is unquestionable. Not only has Nature taught the spider to construct a web for the purpose of ensnaring flies that it may devour them, and constituted beasts of prey with carnivorous teeth and instincts; but she has formed even plants, such as the Drosera, to catch and kill flies, and use them for food. Destructiveness is also a source of resentment and indignation—an important defensive as well as vindicatory purpose. It is a check upon undue encroachment, and tends to constrain mankind to pay regard to the rights and feelings of each other. When properly regulated, it is an assistant to justice.

Constructiveness is given,—and Man is born naked and houseless, but materials for constructing raiment, habitations, and other fabrics that add to the enjoyment of life, abound, and give it scope.

Acquisitiveness is bestowed,—and things of utility exist, capable of being collected, preserved, and applied to the augmentation of our enjoyment.

Secretiveness is given,—and the manifestation of our faculties requires to be restrained, until fit occasions and legitimate objects present themselves. By this propensity,

concealment of our emotions, ideas, designs, and opinions, is rendered not only possible, but easy and agreeable.

Self-Esteem is given,—and a personal existence and personal interests are its objects.

Love of Approbation is bestowed,—and we are surrounded by our fellow-men, whose good opinion it desires.

Cautiousness is adapted to the nature of the external world. Our bodies are liable to suffer injury from a variety of causes, to avoid which it is necessary for us to be habitually watchful. Accordingly, cautiousness is an ever-watchful sentinel, constantly whispering "Take care." The world affords scope for the legitimate and pleasurable exercise of our faculties, without our encountering serious evils, provided we know enough, and are watchful enough; and therefore cautiousness is not overwhelmed with inevitable terrors. It warns us to beware of sudden and unexpected danger; it keeps the other faculties at their posts, by furnishing a stimulus to them to observe and to trace consequences, that safety may be ensured; and when they do their duty, the impulses of cautiousness, instead of being painful, are the reverse: they carry with them a feeling of safety, which is agreeable. Hence this faculty appears equally benevolent in its design as the others which we have contemplated. The gift of an organ of cautiousness fitted Man for a field of danger. It is adapted to a world like the present, but would have been superfluous in a scene into which no evil could intrude.

Here, then, we perceive provision made for supporting the activity of the propensities, and affording them legitimate gratification. Apparently, these powers are conferred on us to support our animal nature, and to place us in harmony with the external objects of creation. Far from being injurious or base in themselves, they possess the dignity of utility, and are sources of high enjoyment, when legitimately indulged. The phrenologist, therefore, would not seek to extirpate them, or to weaken them too much. He desires only to see them restrained from excess, and their exercise

brought into accordance with the great institutions and designs of the Creator. The existence of these organs, and of an external world adapted to them, appears to me to indicate that Man is now the same being as when he was created, and that what is called his corruption consists in his liability to abuse his faculties, and not in any inherent viciousness attributable to his nature itself.

The next class of faculties is that embracing the higher Sentiments of Man. These are the following:—

Benevolence is given,—and sentient and intelligent beings are created, whose happiness we may increase, and whose sufferings we are able to alleviate, thus affording the faculty scope and delight. It is an error to imagine that creatures in misery are the only objects of benevolence, and that it has no function but to experience pity. It is a wide-spreading fountain of generous feeling, desiring not only the removal of pain, but the maintenance and augmentation of enjoyment; and the happier it can render its objects, the greater are its satisfaction and delight. Its exercise, like that of all the other faculties, is a source of pleasure to the individual himself; and the world seems well adapted for affording it scope. Every man has it in his power to confer benefits on others, by legitimately gratifying their various feelings and intellectual faculties without injuring himself.

Veneration.—The highest object of this faculty is the Divine Being, and the highest duty to which it can prompt us is obedience to His laws. I have assumed the existence of God as a fact capable of proof. The very essay in which I am now engaged is an attempt at an exposition of some of His attributes, as manifested in this world. If we find wisdom and benevolence in His works, unchangeableness and no shadow of turning in His laws, harmony in each department of creation; and if we discover that the evils which afflict us are much less the direct objects of His arrangements than the consequences of our ignorant neglect

of institutions really calculated to promote our enjoyment, —then we shall acknowledge in the Divine Being an object whom we may love with all our souls, and reverence with the deepest emotions of veneration, and on whom hope and conscientiousness may repose with a perfect and unhesitating reliance. The exercise of veneration is attended with great positive enjoyment, when the object is in harmony with our other faculties.

Hope is given,—and our understanding is enabled to penetrate into the future. This sentiment is gratified by the absolute reliance which we find reason to place on the stability, wisdom, and goodness of the Divine arrangements: its legitimate exercise, in reference to this life, is to give us a vivifying faith that good is attainable if we use the proper means. Hope is a powerful alleviator of our afflictions. When acting along with the love of life, it disposes to belief in a happy future state of existence; but it is the office of the intellectual faculties to investigate and decide on the evidence of this state.

Ideality is bestowed,—and not only is external nature invested with exquisite loveliness, but a capacity for moral and intellectual refinement is given to us, by which we may rise in the scale of improvement, and, at every step of our progress, reap direct enjoyment from this sentiment. Its constant desire is for "something more exquisite still." In its own immediate impulses it is delightful, and external nature and our other faculties respond to its call for gratification.

Wonder desires something new, and prompts us to admiration. When we contemplate Man endowed with intellect to discover the existence of a Deity, and largely to comprehend His works, we cannot doubt that wonder is provided with objects for its intensest exercise; and when we view him placed in a world where old things are continually passing away, and a system of renovation is incessantly proceeding, we see how vast a provision is made for the gratification of his desire of novelty, and how admirably it is calculated to impel his other faculties to action.

Conscientiousness exists,—and it has a wide field of exercise in regulating the rights and interests of the individual, in relation to other men and to society. The existence of selfish propensities and disinterested emotions demands a power to arbitrate between them, and to regulate both; and such is the sentiment of conscientiousness. To afford it full satisfaction, it is necessary to prove that all the Divine institutions are founded in justice. This is a point which many regard as involved in much obscurity: I shall endeavour, in this Essay, to lift the veil in part; for to me, justice appears to flow through every Divine institution that is sufficiently understood.

One difficulty in regard to conscientiousness long appeared inexplicable; it was, how to reconcile with benevolence the institution by which this faculty visits us with remorse, *after* offences are actually committed, instead of arresting our hands by an irresistible veto before sinning, so as to save us from the perpetration altogether. The problem is solved by the principle, that happiness consists in the activity of our faculties, and that the arrangement by which good follows obedience, and evil disobedience, to the natural laws, is more conducive to self-regulated activity than would have been a system in which choice, judgment, and self-action were superseded by a natural, irresistible, and ever-present restraining power, interposed at every moment when Man was in danger of erring. If, for example, we desired to enjoy the gratification of exploring a new country, replete with beautiful scenery and captivating natural productions; and if we found in our path precipices that gratified ideality, but which, if we neglected the law of gravitation, might occasion death; whether would it be more bountiful in Providence to send an invisible attendant with us, who, whenever we were about to approach the brink, should interpose a barrier, and fairly cut short our advance, without requiring us to bestow one thought upon the subject, and without our knowing when to expect it and when not;—or to leave all open, but to confer on us, as He has done, faculties to comprehend the law of gravita-

tion, eyes fitted to see the precipice, and cautiousness to make us dread falling over it,—and then to leave us to enjoy the scene in perfect safety if we used these powers, but to suffer pain or death if we neglected to exercise them? It is obvious that the latter arrangement would give far more scope to our various powers; and if active faculties are sources of pleasure, as will be shown in the next chapter, then it would contribute more to our enjoyment than the other. Now, conscientiousness punishing after the fact, is analogous, in the moral world, to what this arrangement would be in the physical. If intellect, benevolence, veneration, and conscientiousness do their parts, they will give intimations of disapprobation before the commission of offences, just as cautiousness will give intimations of danger at the sight of the cliff; but if these be disregarded, and we fall over the moral precipice, remorse will follow as a punishment, just as pain is the chastisement for tumbling over the physical brink. The object of both institutions is to permit and encourage the most vigorous and unrestrained exercise of our faculties, in accordance with the physical, moral, and intellectual laws of nature, and to visit us with evil only when we transgress these limits.

FIRMNESS is bestowed,—and the other faculties of the mind are its objects. It supports and maintains their activity, and gives determination to our purposes.

IMITATION is bestowed,—and everywhere Man is surrounded by beings and objects whose actions and appearances it may benefit him to copy. It is highly useful to the young, in helping them to learn rapidly; and at all ages it enables us to assimilate our manners and feelings to those of the persons among whom we live.

The next class of faculties is the Intellectual.

The provisions in external nature for the gratification of the *senses* of hearing, seeing, smelling, taste, and feeling, are so obvious that it is unnecessary to enlarge upon them.

INDIVIDUALITY and EVENTUALITY, or the powers of observing

things that exist, and occurrences, are given,—and history and science contain their objects. "All the truths which natural philosophy teaches depend upon *matter of fact*, and that is learned by observation and experiment, and never could be discovered by reasoning at all." Here, then, is ample scope for the exercise of these powers.

The faculties of FORM, SIZE, WEIGHT, LOCALITY, ORDER, and NUMBER, are bestowed,—and the sciences of geometry, arithmetic, algebra, geography, navigation, botany, mineralogy, zoology, anatomy, and various others, are the fields of their exercise. The first three sciences are almost entirely the products of these faculties; the others result chiefly from them, when applied on external objects.

The faculties of COLOURING, TIME, and TUNE, are given,—and these, aided by constructiveness, form, size, ideality, and other faculties, find scope in painting, sculpture, poetry, music, and the other fine arts.

LANGUAGE is given,—and our faculties inspire us with lively emotions and ideas, which it enables us to communicate to others.

COMPARISON and CAUSALITY exist; and these faculties, aided by individuality, form, size, weight, and the others already enumerated, find ample gratification in natural science, and in moral, political, and intellectual philosophy. The general objects and affairs of life, together with our own feelings, conduct, and relations, are also the objects of the knowing and reflecting faculties, and afford them opportunities for exercise.

CHAPTER III.

ON THE SOURCES OF HUMAN HAPPINESS, AND THE CONDITIONS REQUISITE FOR MAINTAINING IT.

Having presented a rapid sketch of the constitution of Man, and its relations to external objects, we are now prepared to inquire into the sources of his happiness, and the conditions requisite for maintaining it.

The first thing which attracts attention is, that all enjoyment must arise from *activity* of the various systems of which the human constitution is composed. The bones, muscles, nerves, and digestive and respiratory organs, when exercised in conformity with nature, furnish pleasing sensations; while the external senses and internal faculties supply the whole remaining perceptions, emotions, and thoughts, which constitute life and rational existence. If these were habitually asleep, or constitutionally inactive, life, for all purposes of enjoyment, might as well be extinct: existence would be reduced to mere vegetation, without consciousness.

If, then, wisdom and benevolence have been employed in constituting Man, we may expect to find the arrangements of creation calculated to *excite* his various powers, corporeal and mental, to *activity*. And, accordingly, the fact appears to me to be so. The stomach, for example, has been constituted to demand regular supplies of food, which can be obtained only by nervous and muscular exertion. The body has been created destitute of covering, yet standing in need of protection from the blasts of heaven; and raiment can be procured by moderate exercise of the mental and corporeal

powers. Every faculty craves for gratification; but nature presents us only with the elements of pleasure, which we must appropriate, combine, and apply by *action*, to our own advantage. In these arrangements, the design of supporting the various systems of the body in activity, for the enjoyment of the individual, is abundantly obvious.

It has been justly remarked, that "a person of feeble texture and indolent habits has the bone smooth, thin, and light; but Nature, solicitous for our safety, and in a manner which we could not anticipate, combines with the powerful muscular frame a dense and perfect texture of bone, where every spine and tubercle is completely developed." "As the structure of the parts is originally perfected by the action of the vessels, the function or operation of the part is made the stimulus to those vessels. The cuticle on the hand wears away like a glove; but the pressure stimulates the living surface to force successive layers of skin under that which is wearing, or, as anatomy calls it, desquamating; by which they mean that the cuticle does not change at once, but comes off in squamæ or scales."

Directing our attention to the Mind, we discover that individuality and the other perceptive faculties desire, as *their* means of enjoyment, to become acquainted with external objects; while the reflecting faculties long to know the dependencies and relations of all objects and beings. "There is something," says an eloquent writer, "positively agreeable to all men, to all at least whose nature is not most grovelling and base, in gaining knowledge for its own sake. When you see anything for the first time, you at once derive some gratification from the sight being new; your attention is awakened, and you desire to know more about it. If it is a piece of workmanship, as an instrument or machine of any kind, you wish to know how it is made, how it works, and what use it is of. If it is an animal, you desire to know where it comes from, how it lives, what are its dispositions, and, generally, its nature and habits. This desire is felt, too, without at all considering that the

machine or the animal may ever be of the least use to yourself practically; for, in all probability, you may never see them again. But you feel a curiosity to learn all about them, *because they are new and unknown to you.* You accordingly make inquiries; you *feel a gratification* in getting answers to your questions, that is, *in receiving information*, and in knowing more,—in being better informed than you were before. If you ever happen again to see the same instrument or animal, you find it agreeable to recollect having seen it before, and to think that you know something about it. If you see another instrument or animal, in some respects like, but differing in other particulars, you find it pleasing to *compare them together*, and to note in what they agree and in what they differ. Now, all this kind of gratification is of a pure and disinterested nature, and has no reference to any of the common purposes of life; yet it is a pleasure—an enjoyment. You are nothing the richer for it; you do not gratify your palate, or any other bodily appetite; and yet it is so pleasing that you would give something out of your pocket to obtain it, and would forego some bodily enjoyment for its sake. The pleasure derived from science is exactly of the like nature, or rather it is the very same."* This is a correct and forcible exposition of the pleasures attending the active exercise of our intellectual faculties. In the Introduction I have given several illustrations of the manner in which the external world is adapted to the mental faculties of man, and of the extent to which it is calculated to maintain them in activity.

Supposing the human faculties to have received their present constitution, two arrangements for their gratification may be fancied: 1*st*, Infusing into the intellectual powers, at birth, *intuitive knowledge* of every object which they are fitted ever to comprehend, and directing every propensity and sentiment, by an infallible instinct, to its best mode and degree of gratification: Or, 2*dly*, Constituting the intel-

* Objects, Advantages, and Pleasures of Science, p. 1.

lectual faculties as mere *capacities* for gaining knowledge by exercise and application, and surrounding them with objects bearing such relations towards them, that, when these objects and relations are observed, appreciated, and properly applied, high gratification will be obtained,—but when they are unobserved and neglected, the result will be uneasiness and pain; giving at the same time to each propensity and sentiment a wide field of action, comprehending both use and abuse,—and leaving the intellect to direct each to its proper objects, and to regulate its degrees of indulgence: And the question occurs, Which of these modes would be the more conducive to enjoyment?

The general opinion will be in favour of the first; but the second appears to me to be preferable. If the first meal we had eaten had prevented the recurrence of hunger, it is obvious that all the pleasures of satisfying a healthy appetite would have been for ever at an end, and that this apparent bounty would have greatly abridged our enjoyment. In like manner, if (our faculties being constituted as at present) unerring desires had sprung from the propensities and sentiments, and intuitive knowledge had been given to the understanding, so that, when an hour old, we should have been, morally, as virtuous, and, intellectually, as wise, as we could ever become, a great provision for the sustained activity of our faculties would have been wanting. When wealth is acquired, the miser is still unsatisfied; he grasps after *more* with increasing avidity. He is supposed to be irrational in doing so; but he obeys the law of his nature. His chief pleasure arises from the *active state* of his acquisitiveness, and only the pursuit and obtaining of *new treasures can maintain that condition.* The same law is exemplified in the case of love of approbation. The enjoyment which it affords depends on its *active state;* hence, a necessity for *new incense*, and for *mounting higher* in the scale of ambition, is constantly felt by its victims. Napoleon in exile said, "Let us live upon the past;" but he found this impossible: his predominant desires originated in self-esteem and love of approbation, and

the past did not stimulate them, or maintain them in constant activity. In like manner, no musician, artist, poet, or philosopher, however extensive his attainments, would reckon himself happy, if, while his faculties were still vigorous, he were told, "Now you must stop, and live upon the past." And the reason is still the same: the pursuit of new acquirements, and the discovery of new fields of investigation, excite and maintain the faculties in activity; and activity is enjoyment.

If these views are correct, the consequences of imbuing the mind, as at present constituted, with intuitive knowledge, and instinctive direction, would not have been unquestionably beneficial. The limits of our experience and acquirements would have been speedily reached; our first step would have been our last; everything would have become old and familiar; hope would have had no object of expectation, cautiousness no object of fear, wonder no gratification in novelty; but monotony, insipidity, and mental satiety, would apparently have been the lot of Man.

But creation, in its present form, is more wisely and benevolently adapted to our constitution. By the actual arrangement, numerous faculties are bestowed, and their objects are presented: these objects are endowed with qualities fitted, when properly used, to benefit and delight us, and, when misapplied, to injure and distress us; but we are left to find out their qualities by the exercise of our own powers. Provision is thus made for ceaseless activity of the mental faculties; and this activity constitutes delight. Wheat is produced by the earth, and adapted to the nutrition of the body; but it may be rendered more grateful to the taste, more digestible to the stomach, and more stimulating to the nervous and muscular systems, by being stripped of its external skin, ground into flour, and baked. Now, when the Creator endowed wheat with its properties, and the human body with its qualities and functions, He pre-arranged all these relations. In withholding intuitive knowledge of them, but bestowing faculties fitted to find them out; in rendering

the exercise of these faculties agreeable, and in leaving Man, in this condition, to act for himself,—He appears to me to have conferred on him the highest boon. The earth produces also hemlock and foxglove, which if taken in certain moderate quantities exercise a healing effect, but if taken in excess occasion death: now Man's observing faculties, when acting under the guidance of cautiousness and reflection, are fitted to learn their qualities; and he is left to discover these, or to suffer the consequences of neglect. Dr Symonds, Physician to the Bristol Infirmary, writes as follows: "I am not fond of arguments from final causes; but can it be doubted that the various medicines we possess were, as such, a part of the plan of the universe, designed to have a relation to morbid states of living organisms, as much as esculent matters to healthy conditions?"* If so, it seems obvious that Man was left to discover them, for his own benefit, as a stimulus to his mental activity.

Water when heated becomes steam; steam expands with prodigious power; and this power, confined by metal and directed by intellect, is the propeller of the steam-engine, the most efficient yet most humble servant of Man. All this was pre-arranged by the Deity, and Man's faculties were adapted to it; but he was left to observe and discover the qualities and relations of water for himself. The moment, however, we perceive that the Creator has made the exercise of the faculties agreeable, and has arranged the qualities and relations of matter so beneficially that, when known and applied, they carry a double reward to the discoverer—the pleasure of mental exercise, and positive advantage from the results obtained—we must acknowledge that the duty of discovery has been benevolently imposed.

The knowing faculties observe merely the qualities of bodies, their phenomena, and simpler relations. The reflecting faculties observe relations also, but of a higher order. The former, for example, discover that the soil is

* British and Foreign Medical Review, Oct. 1846; vol. xxii. p. 561.

clay or gravel; that it is tough or friable; that it is dry or wet; that excess of water impedes vegetation; that in one season the crop is large, and in another deficient. The reflecting faculties take cognisance of the *causes* of these phenomena; and, aided by the knowing powers, they discover the *means* by which wet soil may be rendered dry, clay be pulverised, light soil invigorated, and all of them made more productive; and also the relationship of particular soils to particular kinds of grain. Nations that exert their knowing faculties in observing the qualities of the soil, and their reflecting faculties in discovering its capabilities, and its relations to water, lime, manures, and the various species of grain, and who put forth their muscular and nervous energies in accordance with the dictates of these powers, receive a rich reward in an abundant supply of food, and a climate improved in salubrity, besides much positive enjoyment attending the exercise of the powers themselves. On the other hand, those communities who neglect to use their mental faculties, and muscular and nervous powers, are visited by ague, fever, rheumatism, and a variety of painful affections arising from damp air; they are stinted in food, and in wet seasons are brought to the very brink of starvation by serious failures of their crops. This suffering is a benevolent admonition from the Creator, that they are neglecting a great duty, and omitting to enjoy a great pleasure; and it will cease as soon as, by obeying the Divine laws, they shall have fairly redeemed the blessings lost by their negligence.

The winds and waves appear, at first sight, to present insurmountable obstacles to our leaving the island or continent on which we happen to be born, and to our holding intercourse with distant climes: But, by observing the relations of water to floating bodies, Man is enabled to construct a ship; by observing the influence of the wind on them, he discovers the use of sails; and, lately, he has found out the expansive quality of steam, and traced its relations until he has produced a machine that enables him to set the roaring

tempest at defiance, and to reach the appointed haven although its loudest and fiercest blasts oppose. All these capabilities were conferred on nature and on Man long before they were practically applied; but, now that we have advanced so far in the career of discovery and improvement, we perceive the scheme of creation to be admirably adapted to support the mental faculties in habitual activity, and to reward us for the exercise of them.

In surveying external nature with this principle in view, we perceive in many qualities of physical objects indications of benevolent design, which otherwise would have been regarded as defects. The Creator obviously intended that Man should discover and use coal-gas in illuminating dwelling-houses; and yet it emits an abominable odour. The bad smell, viewed abstractedly from its consequences, would appear to be an unfortunate quality; but when we recollect that gas is invisible, extremely subtile, and liable to escape—and that, when mixed with a certain proportion of atmospheric air, it is prone to explode—the nauseous and penetrating smell appears like a voice attached to it, proclaiming its escape, and warning us, in louder and louder tones, to attend to our safety by confining it; and then it presents the aspect of wise and benevolent design. Gas stood in this relation to the olfactory nerves from the creation downwards, although it was long unknown to men. We cannot doubt that the discovery and application of it was contemplated by the Creator from the first. A few years ago, when hearing Paganini play on the violin, the subject of wonder with me was the exquisite fineness of his notes. The sounds fell on the ear as if their cause had been purely ethereal. No indication of their material origin could be traced. An angel might be imagined to send forth such strains to mortal ears. The extraordinary development of Paganini's organs of tune and time, with the extreme sensibility of his nervous system, strongly indicated in his countenance and figure, seem to have been the causes of his attaining this exquisite power. In reflecting on his performance, the idea forcibly

struck me, that until a being constituted like Paganini appeared, we had no means of discovering that the substances composing a violin and bow were capable of emitting such pure and dulcet sounds; and that a similar reflection may probably be applicable to the entire sublunary creation. This world may be full of divine qualities and delicious harmonies, if we had only superior men to evoke them! And if the case be so, how truly admirable is that constitution of nature which furnishes us with every possible inducement not only to study itself, but to improve our own qualities; and which presents us with richer treasures, the farther we advance in the discharge of our most pleasing and profitable duties!

It is objected to this argument, that it involves an inconsistency. Ignorance of the natural laws, it is said, is here represented as necessary to happiness, in order that the faculties may obtain exercise in discovering and obeying them;—nevertheless happiness is held to be impossible till these laws shall have been discovered and obeyed: here, then, it is argued, ignorance is represented as at once *essential to*, and *incompatible with*, enjoyment. But this is not an accurate statement of the doctrine. I do not say that, in any individual man, ignorance of the natural laws is essential to enjoyment; I merely maintain, that, with his present constitution, it was more beneficial for him to be left to learn these laws from his parents or his own experience, than at birth to have received intuitive knowledge of all the objects of creation. A similar objection might be stated to the constitution of the bee. Honey is necessary to its enjoyment; yet it has been left to gather honey for itself. The fallacy originates from losing sight of the natural constitution both of the bee and of Man. The bee has been furnished with instinctive tendencies to roam about the fields and flowery meadows, and to exert its energies in labour; and it is obviously beneficial to it to be provided with opportunities of doing so. The old bees provide it with food until it is able to exert its own powers. And so it is with Man.

Gathering knowledge is to the human mind what gathering honey is to the bee. The parent provides instruction until the faculties become capable of acting for themselves. Communicating intuitive knowledge of the natural laws to Man, *while his present constitution continues*, would be the parallel of naturally gorging the bee with honey during the whole summer, when its energies are at their height. When the bee has completed its store, winter benumbs its powers, and these resume their vigour only when its stock is exhausted, and spring returns to afford them fresh means of exercise. No torpor resembling that of winter seals up the faculties of Man; but his ceaseless activity is amply provided for by other arrangements: *First*, Every individual of the race is born in utter ignorance, and, thus starting from zero in the scale of knowledge, must learn the laws of nature for himself, either from his predecessors or from experience; *Secondly*, These laws, compared with the mental capacity of any individual, are of boundless extent, so that every one may, to the end of his life, be learning something new; *Thirdly*, By the actual constitution of Man, he must make use of his acquirements habitually, otherwise he will lose them.

These circumstances remove the apparent inconsistency. If Man had possessed intuitive knowledge of all nature, he could have had no scope for exercising his faculties in *acquiring* knowledge, in *preserving* it, or in *communicating* it. The infant would have been as wise as the most revered sage, and progress have been utterly excluded.

Some who object to these views, imagine that after the human race has acquired knowledge of all the natural laws (if such a result be possible), they *will be in the same condition as if they had been created with intuitive knowledge.* But this by no means follows. Although the *race* should acquire the knowledge supposed, it is not an inevitable consesequence that *each individual* will have it all; which, however, would follow from intuition. The entire soil of Britain belongs to the landed proprietors as a class; but each does not possess it all, and hence every one has opportunities of

adding to his territories—with this disadvantage, however, in comparison with knowledge, that the acquisitions of one necessarily diminish the possessions of another. Further, although the race should have learned all the natural laws, their children would not intuitively inherit their knowledge, and thus the activity of every one, as he appears on the stage, would be provided for; whereas, by intuition, every child would be as wise as his grandfather,—and parental protection, filial piety, and all the delights that spring from difference in knowledge between youth and age, would be excluded. Lastly, by intuition, all knowledge would be habitually present to the mind without effort or consideration; whereas, in the actual state of Man, the *using* of acquirements is essential to the preservation as well as the enjoyment of them. On the whole, therefore, it appears that (Man's nature being what it is) the arrangement by which he is endowed with powers to acquire knowledge, but left to find it out for himself, is both wise and benevolent.

It has been asked, "But is there no pleasure in science except that of discovery? Is there none in using the knowledge we have attained? Is there no pleasure in playing at chess after we know the moves?" I answer, that if we knew beforehand all the moves that our antagonist intended to make, and all our own, which must be the case if we knew *everything* by intuition, we could have no pleasure. The pleasure really consists in discovering the intentions of our adversary, and in calculating the effects of our own play; a certain degree of ignorance of both of which is indispensable to gratification. In like manner, it is agreeable first to discover the natural laws, and then to study the *moves* that we ought to make in consequence of knowing them. So much, then, for the *sources* of human happiness.

In the *second* place,—To reap enjoyment in the *greatest quantity*, and to maintain it *most permanently*, the faculties must be gratified *harmoniously*. For example, in pursuing wealth or fame as the leading object of existence, full gratification is not afforded to benevolence, veneration, and con-

scientiousness, and consequently complete satisfaction cannot be enjoyed: whereas, by seeking knowledge, and dedicating life to the discharge of our duties to ourselves, to our relatives, to our country, to mankind, and to God, in our several vocations, all the faculties will be gratified, and wealth, fame, health, and other advantages, will naturally follow; so that the whole mind will rejoice, and its delights will be permanent.

Thirdly, In order that human happiness may rest on a secure basis, the laws of external creation must themselves accord with the dictates of the whole faculties of Man, acting in harmonious combination; and his intellect must be fitted to discover the nature and relations of both, and to direct his conduct in harmony with them.

Much has been written concerning the extent of human ignorance: but we should discriminate between absolute incapacity to know, and mere want of knowledge, arising from not having used this capacity to its full extent. In regard to the first—our capacity to know—it appears probable that, in this world, we shall never know the essence, beginning, or end of things; because these are points which we have no faculties calculated to discover: But the same Creator who made the external world constituted our faculties; and if we have sufficient data for inferring it to be His intention that we should *enjoy* life,—and if it be true that we can attain happiness only by becoming conversant with those natural laws which are pre-arranged to contribute, when observed, to our enjoyment, but from which, when violated, we suffer,—then it may be safely concluded, that our mental capacities are wisely adapted to the attainment of these objects, whenever we shall do our own duty in bringing them to their highest state of perfection, and in applying them in the best manner.

Sir Isaac Newton observed that all bodies which refract the rays of light were combustible, except one, the diamond, which he found to have the optical quality, but which he was not able, by any means he possessed, to consume by burning.

He did not, however, conclude from this, that the diamond was an exception to the uniformity of nature. He inferred that, as the same Creator had made the diamond and the refracting bodies which he was able to burn, and proceeded by uniform laws, the diamond also would probably be found to be combustible; and that the reason of its resisting his power was his ignorance of the means of raising a temperature sufficiently high to produce its conflagration. A century afterwards, chemists made the diamond blaze with as much vivacity as Sir Isaac Newton had done a wax-candle. Let us proceed, then, on an analogous principle. If the intention of our Creator was that we should lead happy lives, then He knew what was necessary to enable us to do so; and He will not be found to have failed to confer on us powers fitted to accomplish His design, provided we do our duty in developing and applying them. The great motive to exertion is the conviction that increased knowledge will furnish us with increased means of happiness and well-doing, and with new proofs of benevolence and wisdom in the great Architect and Governor of the universe.

In pleading thus earnestly for the wise and benevolent constitution of the human mind, and the admirable adaptation of external nature to its qualities, I may cause uneasiness to some readers who have been educated in the belief that human nature is inherently corrupt, and that physical creation is essentially disordered; but, in doing so, I yield to the imperative dictates of what appears to me to be truth. If the views now expounded shall be shown to be erroneous, I shall be most anxious to abandon them; but if they shall prove to be correct interpretations of nature, they will of necessity stand forth in all the might and majesty of Truth. And if true, they will carry vast consequences in their train. I am not rearing a system from ambitious motives, neither is it my object to attack the opinions of other men. It is simply to lift up the veil of ignorance, and, in all humility, to exhibit the Creator's works in their real colours, in so far as I conceive myself to have been enabled to recognise them.

CHAPTER IV.

APPLICATION OF THE NATURAL LAWS TO THE PRACTICAL ARRANGEMENTS OF LIFE.

If a system of living and occupation were to be devised for human beings, founded on the exposition of their nature now given, something like the following might be proposed.

First, So many hours a-day should be dedicated by every one in health to the exercise of his nervous and muscular systems, in labour calculated to give scope to their functions. The reward of fulfilling this requirement of Nature is health, and a joyous animal existence; the appointed consequence of neglect is disease, low spirits, and premature death.

Secondly, So many hours a-day should be spent in the sedulous employment of the knowing and reflecting faculties; in studying the qualities of external objects, and their relations;—also the nature of animated beings, and their relations;—with the view, not of accumulating mere abstract and barren knowledge, but of enjoying the positive pleasure of mental activity, and of turning every discovery to account, as a means of increasing happiness or alleviating misery. The leading object should always be, to find out the relationship of every object to our own nature, organic, animal, moral, and intellectual, and to keep that relationship habitually in mind, as Divinely appointed with a view to our happiness. We should thereby render our acquirements gratifying to our various faculties. The reward of this conduct would be an increase of pleasure in the act of acquiring

knowledge, and a great accession of power in reaping ulterior advantages from it.

Thirdly, So many hours a-day should be devoted to the cultivation and gratification of our moral and religious sentiments; that is to say, in exercising these in harmony with intellect, and especially in acquiring the habit of admiring, loving, and yielding obedience to the Creator and His institutions. This last object is of vast importance. Intellect is barren of beneficent fruit, however rich it may be in knowledge, until it be fired and prompted to act by moral and religious sentiment. In my view, knowledge by itself is worthless and impotent, in comparison with what it becomes when vivified by lofty emotions. It is not enough that the intellect be informed; the moral and religious faculties must co-operate, in applying the truths and yielding obedience to the precepts which the intellect recognises to be true. As creation is one great system, of which God is the author and preserver, we may fairly presume that there is harmony among all its parts, and between it and its Creator. The human mind is a portion of creation, and its constitution must be included in this harmonious scheme. One grand object of the moral and intellectual faculties of Man, therefore, ought to be the study of the will of God, as manifested in His works.

Before science can rise to its highest dignity, and shed on the human race its richest benefits, it must become religious; that is to say, its facts, principles, and consequences, must be viewed as proceeding directly from the Divine Being,—as a revelation of His will to the human race, for the guidance of their conduct. Science, while separated from the moral feelings, is felt by the people at large to be cold and barren. It may be calculated to interest men of high intellectual endowments; but as in the multitude the moral and religious sentiments greatly predominate in energy over the intellectual powers, it fails to interest them. On the other hand, before religion can exercise its full influence on practical conduct, it must become philosophical. Its doctrines

must harmonise with the system of creation, and the order of Providence must be exhibited as enforcing its dictates.

While reason and religion are at variance, both are obstructed in producing their full beneficial effects. God has placed harmony between them, and it is only human imperfection and ignorance that have introduced discord. One way of cultivating the sentiments would be for men to meet and act together, on the principles which I am now endeavouring to unfold, and to exercise, in mutual instruction, and in united adoration of the great and glorious Creator, the intellectual faculties, and those of benevolence, veneration, hope, ideality, wonder, and conscientiousness. The reward of acting in this manner would be a large increase of knowledge, and the communication of direct and intense pleasure to each other; for I refer to every one who has ever had the good fortune to pass a day or an hour with a really benevolent, pious, honest, and intellectual man, whose soul swelled with reverence for his Creator, whose intellect was replenished with knowledge of His works, and whose whole mind was instinct with sympathy for human happiness,—whether such a day did not afford him the most pure, elevated, and lasting gratification he ever enjoyed? Such an exercise, besides, would invigorate the whole moral and intellectual powers, and fit them more and more to discover and obey the Divine institutions.

A knowledge of Phrenology is highly conducive to this enjoyment of our moral and intellectual nature. No faculty is bad, but, on the contrary, each has a legitimate sphere of action, and, when properly gratified, is a fountain equally of profit and of pleasure; in short, Man possesses no feeling, of the right exercise of which an enlightened and ingenuous mind needs be ashamed. A party of thoroughly practical phrenologists, therefore, meet in the perfect knowledge of each other's qualities; they respect these as the gifts of the Creator; and their great object is to derive the utmost pleasure from their legitimate use, and to avoid abuse of them. The distinctions of country and education are broken down

by unity of principle; the chilling restraints of cautiousness, self-esteem, secretiveness, and love of approbation, which stand as barriers of eternal ice between human beings in the ordinary intercourse of society, are gently removed; the directing sway is committed to benevolence, veneration, conscientiousness, and intellect; and then the higher principles of the mind operate with a delightful vivacity, unknown to persons deficient in confidence in the better qualities of human nature.

Intellect, also, should be regularly exercised in arts, science, philosophy, practical business, observation, and reflection.

I have said nothing of dedicating hours to the direct gratification of the animal powers; not that they should not be exercised, but that scope for their activity is included in the employments already mentioned. In the destruction that proceeds constantly in nature, destructiveness is quietly excited. In muscular exercises, combativeness, destructiveness, constructiveness, acquisitiveness, self-esteem, and love of approbation, may all be gratified. In contending with and surmounting physical and moral difficulties, combativeness and destructiveness obtain vent; in working at a mechanical employment requiring the exertion of strength, these two faculties, and also constructiveness and acquisitiveness, will be exercised; in emulation who shall accomplish most good, self-esteem and love of approbation will obtain scope. In the exercise of the moral faculties, several of these, and others of the animal propensities, are employed; amativeness, philoprogenitiveness, and adhesiveness, for example, acting under the guidance of benevolence, veneration, conscientiousness, ideality, and intellect, receive direct enjoyment in the domestic circle. From their being properly directed, also, and from the superior delicacy and refinement imparted to them by the higher powers, they do not infringe the moral law, and leave no sting or repentance in the mind.

Finally, a certain portion of time should be dedicated to food and sleep.

All systems hitherto practised have been deficient in providing for one or more of these branches of enjoyment. In a community at Orbiston in Lanarkshire, formed in the year 1825, on Mr Owen's principles, music, dancing, and theatrical entertainments were provided; but the people soon became tired of these. Sufficient moral and intellectual instruction was not supplied. The novelty excited them, but there was nothing substantial behind. In ordinary society, very little of either instruction or amusement is provided. The neglect of innocent amusement is a great error.

If there be truth in these views, they may throw some light on two important questions that have hitherto embarrassed philosophers, in regard to the progress of human improvement. The first is, Why should Man have existed so long, and have made so small an advance on the road to happiness? It is obvious that the very scheme of creation which I have described implies that Man is a progressive being; and progression necessarily supposes lower and higher conditions of attainment and enjoyment. While men are ignorant, there is great individual suffering. This distresses sensitive minds, and seems inexplicable: they cannot conceive how improvement should so slowly advance. I confess myself incapable of affording any philosophical explanation why Man should have been so constituted; neither can I or any man give a reason why the whole earth was not made temperate and productive, instead of being partially covered with barren sand and eternal snow. When the inhabitants of Britain wore the skins of animals, and lived in huts and caves, we may presume that, in rigorous winters, many of them suffered severe privations, and that some would perish from cold. If there had been among the sufferers a gifted philosopher, who observed the talents that were inherent in the people, although then latent, and who, in consequence, foresaw the splendid palaces and warm fabrics which their descendants would one day produce, he might well have been led to deplore the slow progress of improvement, and have grieved at the prevalence of so much intermediate misery.

Yet the explanation that Man is a progressive being is all that philosophy can offer; and if this satisfy us as to the past, it should be equally encouraging in regard to the present and the future. The difficulty is eloquently adverted to by Dr Chalmers in his Bridgewater Treatise: "We might not know the reason," says he, "why, in the moral world, so many ages of darkness and depravity should have been permitted to pass by, any more than we know the reason why, in the natural world, the trees of a forest, instead of starting all at once into the efflorescence and stateliness of their manhood, have to make their slow and laborious advancement to maturity, cradled in storms, and alternately drooping or expanding with the vicissitudes of the seasons. But though unable to scan all the cycles either of the moral or natural economy, yet we may recognise such influences at work as, when multiplied and developed to the uttermost, are abundantly capable of regenerating the world. One of the likeliest of these influences is the power of education, to the perfecting of which so many minds are earnestly directed at this moment, and for the general acceptance of which in society we have a guarantee in the strongest affections and fondest wishes of the fathers and mothers of families."*

Although, therefore, we cannot explain why Man was constituted a progressive being, and why such a being advances slowly, there is at least, as I have endeavoured to show, an adaptation of his faculties to his condition. If I am right in the fundamental proposition, that harmonious activity of the faculties is synonymous with enjoyment of existence, it follows that it would have been less wise and less benevolent towards Man, constituted as he is, to give him intuitive perfect knowledge, thereby leaving his mental powers with diminished motives to activity, than to bestow on him faculties endowed with high susceptibility of action, and to surround him with scenes, objects, circumstances, and relations, calculated to maintain them in activity; although this latter

* Vol. i. p. 186.

arrangement necessarily subjects him to suffering while ignorant, and renders his first ascent in the scale of improvement difficult and slow. It is interesting to observe, that, according to this view, although the first pair of the human race had been created with powerful and well-balanced faculties, but of the same nature as at present, still, if they were not also inspired with intuitive knowledge of the whole creation and its relations, their first movements, as *individuals*, would be *retrograde*—that is, they would, through pure want of information, infringe many natural laws, and suffer evil—while, as *parts of the race*, they would be decidedly *advancing;* because every pang they suffered would lead them to a new step in knowledge, and prompt them to advance towards a much higher condition than that which they occupied at first.

Not only is Man really benefited by the arrangement which leaves him to discover the natural laws for himself, although, during the period of his ignorance, he suffers much evil from want of acquaintance with them; but the progress which he has already made towards knowledge and happiness must, from the very extent of his experience, *be actually greater* than can at present be perceived. Its extent will become more obvious, and his experience itself more valuable, after he has obtained a view of the true theory of his constitution. He will find that past miseries have at least exhausted numerous errors, and he will know how to avoid thousands of paths that lead to pain: in short, he will then discover that errors in conduct, like errors in philosophy, give additional importance and practicalness to truth, by the demonstration which they afford of the evils attending departures from its dictates. The grand sources of human suffering at present are bodily disease and mental anxiety; and, in the next chapter, these will be traced to infringement, through ignorance or otherwise, of physical, organic, moral, or intellectual laws, which, when understood, appear in themselves calculated to promote the happiness of the race. It may be supposed that, according to the view presented in Chapter III.,

enjoyment will decrease as knowledge accumulates; but ample provision is made against this event, by withholding intuition from each generation as it appears on the stage. Each must acquire knowledge for itself; and, provided ideas are suited to the faculties, the pleasure of acquiring them from instructors is second only to that of discovering them ourselves. It is probable, moreover, that many ages will elapse before *all* the facts and relations of nature shall have been explored, and the possibility of discovery exhausted. Indeed, if the universe be infinite, knowledge can *never* be complete.

The second question is, Has Man really advanced in happiness in proportion to his increase in knowledge? We are apt to entertain erroneous notions of the pleasures enjoyed in past ages. Fabulists have represented ignorant men as peaceful, innocent, and gay; but if we look narrowly into the conditions of savage and barbarian life in the present day, and recollect that these were the states of all nations before they acquired scientific knowledge, we shall not much or long regret the pretended diminution of enjoyment by civilisation.* The superiority of the latter condition becomes certain, when we discover that, until the intellect is extensively informed, and the moral sentiments are duly exercised, the animal propensities bear the predominant sway; and that wherever these are supreme, misery is an inevitable concomitant. Indeed, the answer to the objection that happiness has not increased with knowledge, appears to me to be found in the fact, that until Phrenology was discovered, the nature of Man was not scientifically known, and that, in consequence, very few of his institutions, civil or domestic, were founded on principles accordant with the laws of his constitution. Owing to the same cause, also, much of his knowledge has necessarily remained partial, and inapplicable to use; but after this science shall have been appreciated and applied, clouds of darkness, accumulated through long

* See on this subject the excellent treatise on *The New Zealanders*, p. 360, in the "Library of Entertaining Knowledge."

ages that are past, may be expected to melt away as if touched by the rays of the meridian sun,—and with them, many of the miseries that attend total ignorance or imperfect information, to disappear.*

It ought also to be kept constantly in remembrance that Man is a *social being*, and that the precept, "Love thy neighbour as thyself," is imprinted in his constitution. That is to say, so much of the happiness of each individual depends on the habits, practices, and opinions of the society in which he lives, that he cannot reap the full benefits of his own advancement, until similar principles have been embraced and realised in practice by his fellow-men. This renders it his interest, as it is his duty, to communicate his knowledge to them, and to carry them forward in the career of improvement. At this moment, there are thousands of persons who feel their enjoyments, physical, moral, and intellectual, impaired and abridged by the mass of ignorance and prejudice which everywhere surrounds them. They are men living before their age, and whom the world neither understands nor appreciates. Let them not, however, repine or despair; but let them dedicate their best efforts to communicating the truths which have presented to themselves the best prospects of happiness, and they will not be disappointed. The law of our constitution which has established the superiority of the moral sentiments, renders it impossible for enlightened men to attain the full enjoyment of their own rational nature, until they have rendered their fellow-men also virtuous and happy. In the truth and power of this principle, the ignorant and the wretched have a guarantee from Nature for the efforts of their more fortunate brethren being devoted to their elevation. If all ranks of

* Readers who are strangers to Phrenology, and the evidence on which it rests, may regard the observations in the text as extravagant and enthusiastic; but I respectfully remind them, that, while they judge in comparative ignorance, it has been my endeavour to subject it to the severest scrutiny. Having found its proofs irrefragable, and being convinced of its importance, I solicit their indulgence in speaking of it as it appears to my own mind.

the people were taught the philosophy which I am now advocating, and if, in so far as it is true, it were acted on by legislators, and enforced by religious instructors as the will of the Creator made known to Man through His natural institutions, the progress of general improvement would be greatly accelerated.

If the views now advocated shall ever prevail, it will be seen that the experience of past ages affords no sufficient reason for limiting our estimate of Man's capabilities of civilisation. At present he is obviously but little advanced in his career. Although knowledge of external nature, and of himself, is indispensable to his progress towards his true station as a rational being, yet only four centuries have elapsed since the arts of printing and engraving were invented; without which, knowledge could not be disseminated through the mass of the people. And even now, as the art of reading is by no means general, the *means* of calling Man's rational nature into activity, although discovered, are but very imperfectly applied. It is only five or six centuries since the mariner's compass became known in Europe; without which even philosophers could not ascertain the most common facts regarding the size, form, and productions of the earth. It is not yet four hundred years since one-half of the habitable globe, America, became known to the other half; and considerable portions of it are still unknown to the best-informed geographers. It is but two centuries and a half since the circulation of the blood was discovered; previously to which it was impossible for even physicians to form any correct idea of the uses of many of Man's corporeal organs, and of their relations to external nature. Haller, who flourished in the middle of the eighteenth century, may be regarded as the founder of Human Physiology as a science of observation. It was only towards the conclusion of the same century that the functions of the brain and nervous system were discovered; before which, Man possessed no adequate means of becoming acquainted with his mental constitution and its adaptation to external circum-

stances and beings. Not till the year 1774 was the study of Chemistry, or of the constituent elements of the globe, put into a philosophical condition by Dr Priestley's discovery of oxygen; nor did hydrogen become known till 1766. Before that time, men were comparatively ignorant of the qualities and relations of the most important material agents with which they were surrounded. Electricity became a science only in the last century; galvanism was discovered in 1794, and gas-light about 1798; while steam-boats, steam-looms, steam-carriages, the safety-lamp, and the electric telegraph, are inventions of the present century.

It is only by our own generation that the study of Geology has been seriously begun; without which we could not know the past changes in the physical structure of the globe—a matter of much importance in judging of our present position in the world's progress. This science also is still far from maturity; an inconceivable extent of territory remains to be explored, from the examination of which many interesting and instructive conclusions will probably be drawn. In Astronomy, too, the discoveries of its modern cultivators promise to throw additional light on the early history of the globe.

The Mechanical Sciences are at this moment in full play, putting forth vigorous shoots, and giving the strongest indications of youth, and none of decline.

The sciences of Morals and of Government are, in many respects, still in a crude condition.

In consequence, then, of his profound ignorance, Man, in all ages, has generally been directed in his pursuits by the mere impulse of his strongest propensities—formerly to war and conquest, and now to the accumulation of wealth,—without having framed his habits and institutions in conformity with correct views of his own nature, and its real interests and wants. During past ages, nature has been constantly operating on Man; but in consequence of his ignorance of its laws, he has not generally accommodated his conduct to its influence, and hence has suffered countless evils. This

condition of things continues in a great measure to exist. Up to the present day, the mass of the people in every country have remained essentially ignorant, the tools of interested leaders, or the creatures of their own blind impulses, unfavourably situated for the development of their rational nature; and they, constituting the great majority, necessarily influence the condition of the rest. But at last the arts and sciences seem to be tending towards the abridging of human labour, so as to give leisure to the mass of the people; while the elements of useful knowledge are so rapidly increasing, the capacity of the operatives for instruction is so generally recognised, and the means of communicating it are so powerful and abundant, that a new era may fairly be considered to have begun.

From the want of a practical philosophy of human nature, multitudes of estimable and intelligent persons are at present anxious only for the preservation of the attainments which society possesses, and dread retrogression in the future. If the views now expounded are correct, this race of moralists and politicians will in time become extinct; because, progression being the law of our nature, the proper education of the people will render the desire for improvement universal.

CHAPTER V.

TO WHAT EXTENT ARE THE MISERIES OF MANKIND REFERRIBLE TO INFRINGEMENT OF THE LAWS OF NATURE?

In the present chapter, I propose to consider some of the evils that have afflicted the human race; and to inquire whether they have proceeded from neglect of laws, benevolent and wise in themselves, and calculated, when observed, to promote the happiness of Man, or from a defective or vicious constitution of nature. The following extract from the Journal of John Locke contains a forcible statement of the principle which I intend to illustrate: "Though justice be also a perfection which we must necessarily ascribe to the Supreme Being, yet we cannot suppose the exercise of it should extend farther than his goodness has need of it for the preservation of his creatures in the order and beauty of the state that he has placed each of them in; for since our actions cannot reach unto him, or bring him any profit or damage, the punishments he inflicts on any of his creatures, *i. e.* the misery or destruction he brings upon them, can be nothing else but to preserve the greater or more considerable part; and so being only for preservation, his justice is nothing but a branch of his goodness, which is fain by severity to restrain the irregular and destructive parts from doing harm."*

* Lord King's Life of Locke, vol. i. p. 229; Lond. 1830.

SECT. I.—CALAMITIES ARISING FROM DISREGARD OF THE PHYSICAL LAWS.

The proper way of viewing the Creator's institutions, is to look, first, at their uses, and the advantages that flow from using them aright; and, secondly, at their abuses, and the evils that proceed from this source.

In Chapter II., some of the benefits conferred on Man by the law of gravitation were enumerated; and I may here advert to some of the evils originating from that law, when it is disregarded in human conduct. For example, men are liable to fall from horses, carriages, stairs, precipices, roofs, chimneys, ladders, and masts, and also to slip in the street—by which accidents life is sometimes suddenly cut short, or rendered miserable from lameness and pain; and the question arises, Is human nature provided with any means of protection against these evils, commensurate with their frequency and extent?

The lower animals are subject to this law as well as Man; and the Creator has bestowed on them external senses, nerves, muscles, bones, an instinctive sense of equilibrium, the sense of danger, or cautiousness, and other faculties, to place them in accordance with it. These appear to afford sufficient protection to animals placed in ordinary circumstances; for we very rarely discover any of them, in their natural condition, killed or mutilated by accidents referrible to gravitation. Where their mode of life exposes them to extraordinary danger from this law, they are provided with additional securities. The monkey, which climbs trees, enjoys great muscular energy in its legs, hands, and tail, far surpassing, in proportion to its gravitating tendency, that which is bestowed on the legs and arms of Man; so that, by this means, it springs from branch to branch, and supports itself in almost complete security. The goat, which browses on the brinks of precipices, has received hoofs and legs that give precision and stability to its steps. Birds, which are destined

to sleep on branches of trees, are provided with a muscle passing over the joints of each leg and stretching down to the foot, and which, being pressed by the weight, produces a contraction of their claws, so as to make them cling the faster, the greater the liability to fall. The fly, which walks and sleeps on perpendicular walls and the ceilings of rooms, has a hollow in its foot, from which it expels the air, and the pressure of the atmosphere on the outside of the foot holds it fast to the objects on which the inside is placed. The walrus, or sea-horse, which is destined to climb the sides of ice-hills, is provided with a similar apparatus. The camel, whose native region is the desert of the torrid zone, has broad spreading hoofs to support it on the sandy soil. Fishes are furnished with air-bladders, by dilating and contracting which they can accommodate themselves with precision to the law of gravitation.

In these instances, the lower animals appear to be placed, by their natural endowments, admirably in harmony with gravitation, and guaranteed against its injurious effects. Is Man, then, less an object of love with the Creator? Is he alone left exposed to the evils that spring inevitably from neglecting its operation? His means of protection are different, but when understood and applied they will probably be found not less complete. Man also has received bones, muscles, nerves, an instinct of equilibrium and the faculty of cautiousness; but less in proportion to his figure, size, and weight, than those bestowed on the lower animals. The difference, however, is more than compensated by other faculties, particularly those of constructiveness and reflection, in which he greatly surpasses them. Keeping in view that the external world, in regard to Man, is arranged on the principle of the supremacy in him of the moral and intellectual faculties, we shall probably find that the calamities suffered by him from the law of gravitation, are referrible to predominance of the animal propensities, or to neglect of proper exercise of his intellectual powers. For example, when coaches break down, ships sink, or men fall from

ladders, how generally may the cause be traced to decay in the vehicle, the vessel, or the ladder, which a predominating acquisitiveness allowed to remain unrepaired; or when men fall from houses and scaffolds, or slip on the street, how frequently should we find their muscular, nervous, and mental energies impaired by preceding debaucheries—in other words, by predominance of the animal faculties—which for the time diminished their natural means of accommodating themselves to the law from which they suffer? The slater, in using a ladder, assists himself by the reflective powers; but in walking along the ridge of a house, or standing on a chimney, he takes little or no aid from these faculties; he trusts to the mere instinctive power of equilibrium, in which he is inferior to the lower animals,—and, in so doing, clearly violates the law of his nature, that requires him to use reflection where instinct is deficient. Causality and constructiveness could invent and fashion means by which, if he slipped from a roof or a chimney, his fall might be arrested. A small chain, for instance, attached by one end to a girdle round his body, and having the other end fastened by a hook and eye to the roof, might leave him at liberty to move, and might break his fall in case he slipped.

The objection will probably occur, that in the uncultivated condition in which the mental powers exist, the great body of mankind are incapable of exerting habitually that degree of moral and intellectual energy which is indispensable to observance of the natural laws; and that therefore they are less fortunate than the lower animals. I admit that, at present, this representation is to a considerable extent just; but nowhere do I perceive the human mind instructed, and its powers exercised, in a degree at all approaching to their limits. Let any one recollect how much greater capacity for enjoyment and feeling of security from danger he has experienced, at a particular time, when his whole mind was filled with, and excited by, some mighty interest, not only allied to, but founded in, morality and intellect, than in that languid condition which accompanies the absence of elevated

and ennobling emotions; and he may form some idea of what man may achieve, when his powers shall have been cultivated to the extent of their capacity. At the present moment, no class of society is systematically instructed in the constitution of the mind and body, in the relations of these to external objects, in the nature of those objects, in the principle that activity of the faculties is the true source of pleasure, and that the higher the powers the more intense the delight; and if such views be to the mind what light is to the eyes, air to the lungs, and food to the stomach, there is no wonder that a mass of inert *mentality*, so to speak, should everywhere exist around us, and that numberless evils should spring from this condition of the people. If active faculties, harmoniously gratified, are the natural fountains of enjoyment, and the external world is created with reference to this state, it is as obvious that misery must result from animal supremacy and intellectual torpidity, as that flame, which is constituted to burn only when supplied with oxygen, must inevitably become extinct when exposed to carbonic acid gas. Finally, if the arrangement by which Man is left to discover and obey the laws of his own nature, and of the physical world, be more conducive to activity than intuitive knowledge, the calamities now contemplated may have been instituted to force him to do his duty; and the execution of his duty will constitute his delight.

While, therefore, we lament the fate of individual victims to the law of gravitation, we cannot condemn that law itself. If it were suspended to save men from the effects of negligence, not only might the proud creations of human skill totter to their base, and the human body rise from the earth and hang midway in the air; but our highest enjoyments would be terminated, and our faculties become useless, by being deprived of their field of action. If, for instance, the same cause did not always, *cæteris paribus*, produce the same effects, but the physical laws were suspended or varied to accommodate themselves to Man's negligence or folly, it is obvious that the faculty of causality would be without an

object, and that no definite course of action could be entered on with confidence in the result. If, on the other hand, this view of the constitution of nature were kept steadily in mind, the occurrence of one such accident would stimulate reflection to discover the means of avoiding others.

Similar illustrations and comments might be given, in regard to the other physical laws to which Man is subject; but the object of the present essay being merely to evolve principles, I confine myself to gravitation, as the most obvious and best understood.

I do not mean to say, that, by the mere exercise of intellect, Man may absolutely guarantee himself against all accidents; but only that the more ignorant and careless he is, the more will he suffer,—and the more intelligent and vigilant, the less; and that I can perceive no limits to this rule. The law of most civilised countries recognises this principle, and subjects owners of ships, coaches, and other vehicles, in reparation of damage arising from gross infringements of the physical laws. It is unquestionable that the enforcement of this liability has given increased security to travellers.

SECT. II.—ON THE EVILS THAT BEFALL MANKIND FROM INFRINGEMENT OF THE ORGANIC LAWS.

It is a very common error to imagine that the *feelings* of the mind are communicated to it through the medium of the *intellect;* and, in particular, that if no indelicate objects reach the eyes, or expressions penetrate the ears, perfect purity will necessarily reign within: and, proceeding on this mistake, some persons object to all discussion of the subjects treated of under the "Organic Laws," in works designed for general use. But their principle of reasoning is unsound, and the result has been detrimental to society. The *feelings* exist and possess activity distinct from the *intellect;* they spur it on to obtain their gratification; and it may become either their guide or their slave, according as it is, or is not,

enlightened concerning their constitution and objects, and the laws of nature to which they are subjected. The most profound philosophers have inculcated this doctrine, and by phrenological observation it is demonstratively established. The organs of the feelings are distinct from those of the intellectual faculties; they are larger; and as each faculty, *cæteris paribus*, acts with a vigour proportionate to the size of the organs, the feelings are the active or impelling powers of the mind. The cerebellum, or organ of amativeness, is the largest of the whole of the mental organs; and, being endowed with natural activity, it fills the mind spontaneously with emotions and suggestions, which cannot be prevented from arising, or eradicated after they exist; but the outward manifestations of which may be directed, controlled, or resisted, by intellect and moral sentiment. The question, therefore, is, Whether is it more beneficial to enlighten the understanding, that it may control and direct this feeling,—or (under the influence of an error in philosophy, and false delicacy founded on it) to permit the propensity to riot in all the fierceness of a blind animal instinct, withdrawn from the eye of reason, but not thus deprived of its vehemence and importunity? The former course appears to me to be the only one consistent with reason and morality; and I shall follow it, in reliance on the good sense of my readers, that they will at once discriminate between practical instruction concerning this feeling, addressed to the intellect, and lascivious representations of objects connected with it, addressed to the propensity itself—with the latter of which the enemies of improvement may attempt to confound my observations. To the pure, all things are pure. Every function of the mind and body has been instituted by the Creator; each has a legitimate sphere of activity; but all may be abused: and it is impossible always to avoid the abuse of them, except by being instructed in their nature, objects, and relations. This instruction is therefore of the most beneficial kind.

An organized being is one which derives its existence from a previously existing organized being—which subsists on food, grows, attains maturity, decays, and dies. Whatever the ultimate object of the Creator in constituting organized beings may be, it will scarcely be doubted that part of His design is that they should enjoy their existence here; and, if so, the object of every part of their structure should be to conduce to this end. To render an organized being perfect in its kind, the germ from which it springs must be complete in all its parts, and sound in its whole constitution; and when it has been ushered into life, and as long as it continues to live, it must be supplied with air, light, and every aliment necessary for its support. A third condition is, that it shall duly exercise its functions. When the conditions are fulfilled, the being should enjoy pleasure from its organized frame, if its Creator is benevolent; and its constitution should be so adapted to its circumstances as to admit of their fulfilment, if its Creator is wise and powerful. Is there, then, no such phenomenon on earth, as a human being existing in possession of full organic vigour, from birth till advanced age, when the organic system is fairly worn out? Numberless examples of this kind have occurred; and they show that the corporeal frame of Man is so constituted as to admit of the *possibility* of his enjoying health and vigour during the whole period of a long life. It is mentioned in the Life of Captain Cook, that "one circumstance peculiarly worthy of notice is the perfect and uninterrupted health of the inhabitants of New Zealand. In all the visits made to their towns, where old and young, men and women, crowded about our voyagers, they never observed a single person who appeared to have any bodily complaint; nor among the numbers that were seen naked, was once perceived the slightest eruption upon the skin, or the least mark which indicated that such an eruption had formerly existed. Another proof of the health of these people is the facility with which the wounds they at any time receive are healed. In the man who had been shot with the musket-

ball through the fleshy part of his arm, the wound seemed to be so well digested, and in so fair a way of being perfectly healed, that if Mr Cook had not known that no application had been made to it, he declared that he should certainly have inquired, with a very interested curiosity, after the vulnerary herbs and surgical art of the country. An additional evidence of human nature being untainted with disease in New Zealand, is the great number of old men with whom it abounds. Many of them, by the loss of their hair and teeth, appeared to be very ancient, and yet none of them were decrepit. Although they were not equal to the young in muscular strength, they did not come in the least behind them with regard to cheerfulness and vivacity. Water, as far as our navigators could discover, is the universal and only liquor of the New Zealanders. It is greatly to be wished that their happiness in this respect may never be destroyed by such a connection with the European nations, as shall introduce that fondness for spirituous liquors which hath been so fatal to the Indians of North America."*

In almost every country, indeed, persons are to be found who have been free from sickness during the whole course of a protracted life.

Now, this excellent health could not occur in individuals unless it were fairly within the capabilities of the race.

The sufferings of women in childbed have been cited as evidence that the Creator has not intended the human being, under any circumstances, to execute all its functions entirely free from pain. But, besides the obvious answer, that the objection applies only to one sex, and is therefore not to be too readily presumed to have its origin in nature, there is good reason to ascribe much of the suffering in question to departures from the natural laws, either in the structure or in the habits of those who experience it.†

* Kippis's Life of Captain Cook, p. 100; Dublin, 1788.

† Professor Simpson of Edinburgh, and his numerous followers, have for a series of years applied chloroform to produce insensibility to pain in cases of difficult labour. While it extinguishes sensibility for

The most perfect forms and proportions of the human body being those best adapted to health and activity, there is an advantage in studying fine models of the human figure in painting and sculpture. They raise our ideas of the excellence of form and proportion of which our nature is susceptible, and furnish us with motives to treat children in a manner calculated to educe and preserve these requisites of health and beauty.

Let us assume, then, that the organized system of Man admits of the *possibility* of health, vigour, and organic enjoyment, during the full period of life; and proceed to inquire into the causes why these advantages are not universal.

1. One condition of their possession, I have stated, is, that the germ of the infant must be complete and sound in all its parts. If an agriculturist sow corn that is weak, wasted, or damaged, the plants that spring from it will be feeble, and liable to speedy decay. The same law prevails in the animal kingdom; but has it hitherto been observed by Man? Certainly it has not. Indeed, its existence has been either nearly unknown, or greatly disregarded. The feeble, the sickly, the incompletely developed through extreme youth, and the exhausted with age, marry, and, without considering what organization they may transmit to their offspring, bring into the world miserable beings, the very rudiments of whose existence are tainted with disease. If we trace such conduct to its source, we shall find it to originate in the supremacy of animal propensity, or in ignorance, or in both. It implies an utter disbelief in the organic laws, and in their consequences being pre-ordained by God for the purpose of serving as a guide to rational

the time, it does not impede the muscular contractions which accomplish childbirth; and, in consequence, he recommends it to be used also in cases of natural labour. The benevolence and wisdom implied in such a pre-arrangement as this, are calculated to excite admiration and gratitude in every well-constituted mind; nevertheless, this application of chloroform was at first objected to, as being a profane attempt to abrogate the primeval curse pronounced upon woman. See Appendix No. IV.

beings in their marriages. The inspiring motives of such unions are generally sensual appetite, avarice, or ambition, operating in the absence of all just conceptions of the impending evils. The fruit of this conduct is debility and pain transmitted to the children, and reflected back in anxiety and sorrow to the parents. From such observations as I have been able to make, I am convinced that the union of certain temperaments and combinations of mental organs in the parents, is highly conducive to health, talent, and morality in the offspring, and that these conditions may be discovered and taught with greater certainty, facility, and advantage, than is generally imagined. It will be time enough to conclude that men are naturally incapable of accommodating their conduct to the organic laws, when, after their intellectual faculties and moral sentiments have been trained to observance of the Creator's institutions, as at once their duty, their interest, and a grand source of their enjoyment, they shall be found continually to resist them.

2. A second condition of health regards nutriment, which must be supplied of a suitable kind, and in due quantity. Free air also is requisite, with light, cleanliness, and attention to every physical arrangement by which the functions of the body may be strengthened. Have mankind acted in accordance with, or neglected, *this* organic law? I need scarcely answer the question. To be able to conform to the laws of our constitution, we must first know them. Before we can know the organic constitution of our body, we must study it; and the study of the human constitution comprises anatomy and physiology. Before we can become acquainted with its relations to external objects, we must learn the existence and qualities of these objects (unfolded by chemistry, natural history, and natural philosophy), and compare them with the constitution of the human body. When we have fulfilled these conditions, we shall be better able to discover the laws which the Creator has instituted in regard to our organic system.*

* In Dr Andrew Combe's works on "Physiology applied to Health

It will be said, however, that such studies are impracticable to the great bulk of mankind, and, besides, do not appear much to benefit those who pursue them.

They are impracticable only while mankind prefer resting their public and private conduct on the basis of the propensities, instead of employing their intellectual faculties to discover, and their moral and religious sentiments to obey, the laws which God has ordained for their guidance.

The second objection, that those who study these sciences are not more healthy and happy than those who neglect them, admits of an easy answer. They may have inherited feeble frames from their parents. Besides, only parts of these sciences have been communicated to a few whose main design in studying them has been to apply them as means of acquiring wealth and fame; but they have not been generally taught as connected parts of a great system of natural arrangements, fraught with the highest influences on human enjoyment; and in almost no instance have the intellect and moral sentiments been systematically directed to the natural laws as the grand fountains of happiness and misery to the race, and trained to conform to them as the institutions of the Creator. On this point, nearly universal infidelity to the Divine institutions pervades society. In cases where physiology, natural history, and natural philosophy have been properly studied, and the Divine authority of the rules of conduct which they reveal has been recognised, direct benefit *has* been derived from the study of them.

3. A third organic law is, that all our functions shall be duly exercised; and is this law observed by mankind? Many persons are able, from experience, to attest the severity of the punishment that follows from omitting to exercise the

and Education," "Digestion and Diet," and "The Management of Infancy," the organic laws are expounded in detail, and many striking examples are given of infringement of these laws, and of its injurious consequences.

muscular system, in the lassitude, indigestion, irritability, debility, and general uneasiness that attend a sedentary and inactive life; but the penalties that attach to neglect of exercising the *brain* are much less known. The brain is the fountain of nervous energy to the whole body, and many persons are habitual invalids, without actually labouring under any well defined disease, solely from its defective or irregular exercise. In such cases, not only does the mind suffer debility in its feelings and intellectual capacities, but all the functions of the body participate in its languor, because all of them receive a diminished and vitiated supply of the nervous stimulus, a due share of which is essential to their healthy action. The best mode of increasing the strength and energy of any organ is to exercise it regularly and judiciously, according to the laws of its constitution.* The brain is the organ of the mind; different parts of it manifest distinct faculties; and although the power of manifestation in regard to each is proportionate, *cæteris paribus*, to the size of its organ, still, the brain is subject to the general laws of the organism, and is strengthened by the same means as the other organs. When the muscles are called into activity, they receive an increased supply of blood and of nervous stimulus, and their vessels and fibres become at once larger, firmer, and more capable of action. Thought and feeling are to the brain what bodily exercise is to the muscles; they are accompanied by increased circulation in its blood-vessels, and an augmented elaboration of nervous energy. In a case reported by Dr Pierquin, observed by him in one of the hospitals of Montpellier in 1821, the brain of a female patient, part of whose skull had been removed, was seen motionless and lying within the cranium when she was in a dreamless sleep; palpitating, and protruding beyond the skull, when she was agitated by dreams; more protruded in dreams reported by herself to be vivid; and still more so when perfectly awake, and especially if engaged in active thought

* See Dr A. Combe's "Physiology applied to Health &c.," chapters vii. and xiii., fifteenth edition.

or sprightly conversation. Similar cases are reported by Sir Astley Cooper and Professor Blumenbach.*

Those parts of the brain which manifest the feelings constitute by far the largest portion of it, and are best exercised by discharging the active duties of life and of religion. The parts which manifest the intellect are smaller, and are exercised by the application of the understanding in practical business, and in the arts, sciences, or literature.

The first step, therefore, towards establishing the regular exercise of the brain, is to educate and train the mental faculties in youth; and the second is to place the individual habitually in circumstances demanding the discharge of useful and important duties.

I have often heard the question asked, What is the use of education? The answer might be illustrated by explaining to the inquirer the nature and objects of the limbs, lungs, and eyes, and then asking him, if he could conceive how a being thus constituted could be benefited by obtaining access to earth, air, and light? He would perceive that these must be of high utility to him, as affording means by which his organs could obtain scope for action, which action we suppose him to know to be pleasure. To those, then, who know the functions of the brain as the organ of the moral and intellectual powers of Man, I need only say, that the objects presented by education to the mind, bear to it the same relation that the physical elements of nature do to the nerves and muscles; they afford the faculties scope for action, and yield them delight. The meaning commonly attached to the word *education*, is the acquisition of languages; but I employ it here to indicate knowledge of nature, and of useful artificial objects; also accomplishments and training. Again, the signification generally attached to the word *use* in the question is, the amount of *money*, *influence*, or *consideration*, that education will bring—these being the only objects of

* American Annals of Phrenology, No. I., p. 37. Sir A. Cooper's Lectures on Surgery, by Tyrrel, vol. i. p. 279. Elliotson's Blumenbach, 4th edition, p. 283. Phrenological Journal, vol. ix. p. 223.

strong desire with which uncultivated minds are acquainted; and it is not perceived in what way education can greatly promote their attainment. But when the mind becomes acquainted with its own constitution, and with the natural laws, the advantage of moral and intellectual cultivation, as a means of exercising and invigorating the brain and mental faculties, and also of directing the conduct in obedience to those laws, becomes apparent.

But there is an additional benefit arising from healthy activity of the brain, which is little known. Modifications of the nervous energy elaborated by the brain appear to take place, according to the mode in which the faculties and organs are affected. For example, when misfortune and disgrace impend over us, the organs of cautiousness, self-esteem, and love of approbation, are painfully excited, and appear to transmit an impaired or positively noxious nervous influence to the heart, stomach, intestines, and thence to the rest of the body; digestion is deranged, the pulse becomes feeble and irregular, and the whole corporeal system wastes. When, on the other hand, the cerebral organs are agreeably affected, a benign and vivifying nervous influence pervades the frame, and the functions of the body are performed with increased pleasure and success.

Again, the amount of nervous energy increases with the number of cerebral organs roused into action, and with the degree of their activity. In the retreat of the French from Moscow, when no enemy was near, the soldiers became depressed in courage and enfeebled in body, and nearly sank to the earth through exhaustion and cold; but no sooner did the fire of the Russian guns sound in their ears, or the gleam of their bayonets flash in their eyes, than new life seemed to pervade them. They wielded powerfully the arms which, a few moments before, they could scarcely carry or drag on the ground. Scarcely, however, was the enemy repulsed, when their feebleness returned. The theory of this is, that the approach of the combat called into activity a variety of additional faculties; these sent new energy through every

nerve; and, while this vivacity was maintained by the external stimulus, they rendered the soldiers strong beyond their merely physical condition. Many persons have probably experienced the operation of a similar influence. If we are sitting feeble and listless by the fire, and hear of an accident having occurred to some beloved friend who requires our instant aid, or if an unexpected visitor arrive, in whom our affections are bound up,—in an instant our lassitude is gone, and we move with an alertness and animation that seem surprising to ourselves. The cause is the same; these events rouse adhesiveness, benevolence, love of approbation, intellect, and other faculties which were previously dormant, and their influence invigorates the limbs. Dr Sparrman, in his Voyage to the Cape, mentions a striking illustration of the principle. "There was now again," says he, "a great scarcity of meat in the waggon; for which reason my Hottentots began to grumble, and reminded me that we ought not to waste so much of our time in looking after insects and plants, but give a better look-out after the game. At the same time, they pointed to a neighbouring dale overrun with wood, at the upper edge of which, at the distance of about a mile and a quarter from the spot where we then were, they had seen several buffaloes. Accordingly, we went thither; but, though our fatigue was lessened by our Hottentots carrying our guns for us up a hill, yet we were quite out of breath, and overcome by the sun, before we got up to it. Yet, what even now appears to me a matter of wonder is, *that as soon as we got a glimpse of the game, all this languor left us in an instant.* In fact, we each of us strove to fire before the other, so that we seemed entirely to have lost sight of all prudence and caution."

Men who have received from nature large and tolerably active brains, but who, from possessing a competency, are engaged in no profession, and, from not having enjoyed the advantages of a liberal education, take no interest in intellectual and moral pursuits for their own sake, are in general victims to the natural laws. Ignorant of these laws,

they are prone to neglect mental and muscular exercise, and hence suffer the miseries arising from impeded circulation and impaired digestion. For want of objects on which the energy of their minds may be expended, the due stimulating influence of their brains on their bodies is withheld, and the effects of muscular inactivity are aggravated: all the functions consequently become enfeebled; lassitude, uneasiness, anxiety, and a thousand evils, ensue; and life becomes a mere endurance of suffering, through disregard of institutions calculated in themselves to promote happiness and afford delight when known and conformed to. This fate frequently overtakes uneducated women, whose early days have been occupied with business or the cares of a family, but whose occupations have ceased before old age has diminished corporeal vigour. It overtakes also uneducated men who retire from active business in the prime of life. In some instances, these evils accumulate to such a degree that the brain at length gives way, and insanity is the consequence.

It is worthy of remark, that the more elevated the objects of our study, the higher in the scale are the mental faculties which are exercised; and that the higher the faculties, the more pure and intense is the pleasure. Hence, a vivacious and regularly supported excitement of the moral sentiments and intellect is highly favourable to health and corporeal vigour.

No reasonable person, after having his intellect imbued with a perception of, and belief in, the natural laws now explained, can desire continued idleness as a source of pleasure; nor can he regard muscular exertion and mental activity, when not carried to excess, as anything else than enjoyments, vouchsafed to him by the benevolence of the Creator. The notion that moderate labour and mental exertion are evils, can originate only from ignorance, or from viewing the effects of over-exhaustion as the natural result of labour, and not as the consequence of its excess, which the natural laws forbid.

If, then, we sedulously inquire, in each particular instance,

into the *cause* of the sickness, pain, and premature death, or the derangment of the corporeal frame in youth and middle life, which we see so common around us, and endeavour to discover whether it originated in obedience to the physical and organic laws, or sprang from infringement of them, we shall be able to form some estimate how far bodily suffering is justly attributable to imperfections of nature, and how far to our own ignorance and neglect of Divine institutions.

The foregoing principles being of much practical importance, they may with propriety be elucidated by a few examples. Two or three centuries ago, various cities in Europe were depopulated by the plague, and, in particular, London was visited by an awful mortality from this cause, in the reign of Charles II. Some people of that age attributed the scourge to an inscrutable decree of Providence, and others to the magnitude of the nation's moral iniquities. According to the views now presented, it must have arisen from infringement of the *organic laws*, and have been intended to enforce stricter obedience to them in future. There was nothing inscrutable in its causes or objects. The streets of London were then excessively narrow, the habits of the people dirty, their food poor, and no adequate provision was made for introducing a plentiful supply of water, or removing the filth unavoidably produced by a dense population. The great fire in that city which happened soon after the pestilence, afforded an opportunity for remedying in some degree the narrowness of the streets, while habits of increasing cleanliness abated the filth. These changes brought the condition of the people more into accordance with the laws of health, and the plague has not since returned. It thus appears to have had no direct reference to the moral condition of the people; I say *direct* reference, because it would be easy to show that the physical and organic laws are connected indirectly, and act in harmony, with the moral law; and that infringement of the latter often leads to disobedience of other laws, and brings a double punishment on the offender.

Till lately, thousands of children died yearly of the small-pox; but in our day, vaccine inoculation saves ninety-nine out of every hundred, who without its protection would have died.

A gentleman who died in the early part of this century at an advanced age, told me that in his youth the country six miles west from Edinburgh was so unhealthy, that every spring the farmers and their servants were seized with fever and ague, and underwent bleeding and a course of medicine to prevent attacks or remove their effects. At that time these visitations were believed to be sent by Providence, and to be inherent in the constitution of things. But, said my informant, after an improved system of agriculture and drainage was established, and the numerous pools of stagnant water formerly left between the ridges of the fields were removed,—after dunghills were carried to a distance from the doors, and the houses were made more spacious and commodious,—every symptom of ague and marsh-fever disappeared from the district, and it became highly salubrious. In other words, as soon as the gross infringement of the organic laws was abated by a more active exertion of the intellectual and muscular powers of Man, the consequences of that infringement ceased. Another friend informed me that, about the end of last century, he commenced farming in a high and uncultivated district of East Lothian; that at first the crops suffered severely in the spring from cold fogs, but that the region had since been reclaimed and drained, and the climate had greatly improved;—in particular, the destructive mists had disappeared. The same results have followed in Canada and the United States of America, from similar operations.

In like manner, many calamities occurred in coal-pits, in consequence of introducing lighted candles and lamps into places filled with hydrogen-gas, which had emanated from seams of coal, and which, by exploding, scorched and suffocated the men and animals within its reach; until Sir Humphrey Davy discovered that the Creator had established

such a relation between flame, wire-gauze, and hydrogen-gas, that, by surrounding and covering the flame with gauze, its power of setting fire to hydrogen was suspended. In consequence of this discovery, colliers are now able to carry, with safety, lighted lamps into places highly impregnated with inflammable air. I have been informed that the accidents from explosion, which still occur in coal-mines, arise from neglecting to keep the lamps in a proper state.

It is unnecessary to multiply examples in support of the proposition that the human organism in itself admits of a healthy existence from infancy to old age, provided its germ has been healthy, and its subsequent condition has been one in harmony with the physical and organic laws. But it has been objected, that, although the intellect may perhaps be adequate to discover these laws, and to record them in books, it is totally incapable of remembering them, and of formally applying them in every act of life. If, it is said, we could not move a step without calculating the effects of gravitation, and adjusting the body to its influence, —if we could never eat a meal without carefully considering how much we might swallow in accordance with the organic laws,—life would be oppressed by the pedantry of knowledge, and rendered miserable by the observance of trivial details. To this objection I reply, that our faculties are adapted by the Creator to the external world, and act spontaneously when their objects are properly placed before them. In walking during the day on a footpath in the country, we adjust our steps to the inequalities of the surface without being overburdened by mental calculation. With so little trouble, indeed, do we perform this adjustment, that we are not aware of having made any particular mental or muscular effort. But on returning by the same path at night, when we cannot see, we stumble, and discover how important a duty our faculties had been performing during the day. Now, the simple medium of light is sufficient to bring clearly before our eyes the inequalities of the ground; but to make the mind equally familiar with the countless objects which

abound in external nature, and their relations, an intellectual light is necessary, which can be struck out only by exercising and applying the knowing and reflecting faculties. When that light is obtained, and the qualities and relationships in question are clearly perceived, our faculties, so long as the light lasts, will act spontaneously in adapting our conduct to the nature of the objects, just as they do in accommodating our movements to the unequal surface of the earth. After the poisonous qualities of hemlock are known, it is no more necessary for us to go through a course of reasoning on physical, botanical, and chemical objects, in order to be able to abstain from eating it, than it is to go through a course of mathematical investigations before lifting one foot higher than the other in ascending a stair. At present, physical and political science, morals, and religion, are not taught as parts of one connected system; nor are the relations between them and the constitution of Man pointed out to the people. Consequently, theoretical and practical knowledge are often widely separated. This ought not to be the case; for many advantages would flow from systematic scientific education. Some of these may now be mentioned.

In the *first* place, the physical and organic laws, when thoroughly known, appear to the mind as institutions of the Creator, wise and salutary in themselves, unbending in their operation, and universal in their application. They interest our intellectual faculties, and strongly impress our sentiments. The duty of adapting our conduct to them comes home to us with the authority of a mandate from God. While we confine ourselves to recommendations to beware of damp, to observe temperance, or to take exercise, as mere acts of prudence, without showing that God has pre-ordained certain painful consequences to follow from neglect, the injunction is addressed to only two or three faculties,—cautiousness, for instance; and self-love, in him who receives it. But if we are instructed in the constitution of the physical world, and of our organism,—in the uses of the different parts of the human body, and the conditions of their healthy action,—in

the causes of their derangement, and the pains consequent thereon,—the intellect becomes deeply interested in the matter; and if the obligation to comply with these conditions be enforced on our moral and religious sentiments, as a duty imposed by the Creator, which we cannot neglect without suffering evil, then the motives to act in harmony with the physical and organic laws, as well as *the power of doing so*, will be greatly increased. Before we can dance well, not only must we *know the motions*, but our muscles must be trained *to execute them;* and in like manner, to enable us to act on precepts, not only must we comprehend their meaning, but our intellects and sentiments must be disciplined into the habit of actual performance. The work of acquiring and practically using scientific information concerning the natural world, its qualities, and their relations, is to the intellect and sentiments what dancing is to the muscles—it *invigorates them;* and as it is from them that obedience to the natural laws must spring, the exercise renders it easy and delightful.

It is only by comprehending the causes on which consequences depend, that we become thoroughly impressed with the *invariableness* of the physical and organic laws, acquire confidence in and respect for them, and fairly endeavour to accommodate our conduct to their operation. The human faculties are spontaneously active, and desire gratification; but the intellect must have fixed data on which to reason. A man in whom the faculties of constructiveness and weight are powerful, will naturally betake himself to constructing machinery; but if he be ignorant of the principles of mechanical science, he will not direct his efforts to such important ends, nor attain them with so much success, as if his intellect had been stored with this kind of knowledge. In like manner, a man may compose music by the impulses of the faculties of tune and time; but as there are immutable laws of harmony, he will not compose so correctly and in such good taste, if he be ignorant of them, as he would do if he knew them. In every art and science, there are principles referrible solely to the constitution of nature, which admit of countless applications.

By following the laws of harmony, a musician may produce gay, grave, solemn, or ludicrous tunes, but he will never produce one good piece by violating them. While the farmers near Edinburgh allowed stagnant pools to deface their fields, some seasons would be more healthy than others; and, while the cause of disease was unsuspected, this would confirm them in the notion that health and sickness were dispensed by an overruling Providence on inscrutable principles. But the moment the cause was known, it would be found that the most healthy seasons were those which were cold and dry, and the most sickly those which were warm and moist. They would then discover, that the salubrity of one year and the unwholesomeness of another were clearly referrible to *one principle;* and after perceiving this truth, they would be more strongly prompted to apply the remedy, and also rendered morally and intellectually more capable of doing so. If some intelligent friend had merely advised them to drain their fields and remove their dunghills, they probably would not have complied; but whenever their intellects were led to the perception that nature was so constituted that the evil would continue until they acted in this manner, the improvement would be promptly effected.

A young gentleman of Glasgow, whom I knew, went out as a merchant to North America. Business required him to sail from New York to St Domingo. The weather was hot, and he, being very sick, found the confinement below deck intolerable; that is, it was, for the moment, more painful than the course which he followed, of laying himself down at full length on the deck, in the open air. He was warned by his fellow-passengers and the officers of the ship that he would inevitably induce fever by this proceeding; but he was utterly ignorant of the physical and organic laws. His intellect had been trained to regard only wealth and present pleasure as objects of real importance; it could perceive no necessary connection between exposure to the mild grateful sea-breeze of a warm climate, and fever; and he obstinately refused to quit his position. The consequence was, that he

was soon taken ill, and died the day after arriving at St Domingo. Knowledge of chemistry and physiology would have enabled him in an instant to understand, that the sea air in warm climates holds a great quantity of water in solution, and that damp and heat, operating together on the human organs, tend to derange their healthy action, and ultimately to destroy them entirely; and if his sentiments had been deeply imbued with a feeling of the duty of compliance with the institutions of the Creator, he would have actually enjoyed not only a *greater desire*, but a *greater power*, of supporting the temporary inconvenience of the heated cabin, and would probably have escaped unharmed.

The late Dr Robert Macnish of Glasgow favoured me with the following communication, suggested by a perusal of the second edition of the present work :—"On four several occasions, I have nearly lost my life from infringing the organic laws. When a lad of fifteen, I brought on, by excessive study, a brain-fever which nearly killed me; at the age of nineteen I had an attack of peritonitis,* occasioned by violent efforts in wrestling and leaping; while in France, nine years ago, I was laid up with pneumonia,† brought on by dissecting in the great galleries of La Pitié with my coat and hat off in the month of December, the windows next to me being constantly open; and in 1829 I had a dreadful fever, occasioned by walking home from a party at which I had been dancing, in an exceedingly cold morning, without a cloak or greatcoat. I was for four months on my back, and did not recover perfectly for more than eighteen months. All these evils were entirely of my own creating, and arose from a foolish violation of laws which every sensible man ought to observe and regulate himself by. Indeed, I have always thought—and your book confirms me more fully in the sentiment—that by proper attention, crime and disease and misery of every sort could, in a much greater measure than is generally believed, be banished from the

* Inflammation of the lining membrane of the abdomen.

† Inflammation of the lungs.

earth, and that the true method of doing so is to instruct people in the laws which govern their own frame." In 1837, Dr Macnish was cut off by typhus fever in the prime of life.

Captain Murray, R.N., mentioned to Dr A. Combe, that, in his opinion, most of the bad effects of the climate of the West Indies might be avoided by care and attention to clothing; and that so satisfied was he on this point, that he had petitioned to be sent thither in preference to the North American station, and had no reason to regret the change. The measures which he employed, and their effects, are detailed in the following interesting and instructive letter:—

"ASSYNT, *April* 22, 1827.

"MY DEAR SIR,—I should have written to you before this, had I not been anxious to refer to some memorandums, which I could not do before my return home from Coul. I attribute the great good health enjoyed by the crew of His Majesty's ship Valorous, when on the West India station, during the period I had the honour of commanding her, to the following causes:—1*st*, To the keeping the ship perfectly *dry* and *clean*; 2*d*, To habituating the men to the wearing of flannel *next the skin*; 3*d*, To the precaution I adopted, of giving each man a proportion of his allowance of cocoa *before* he left the ship in the *morning*, either for the purpose of watering, or any other duty he might be sent upon; and 4*th*, To the cheerfulness of the crew.

"The Valorous sailed from Plymouth on the 24th December 1823, having just returned from the coast of Labrador and Newfoundland, where she had been stationed two years; the crew, including officers, amounting to 150 men. I had ordered the purser to draw two pairs of flannel drawers and two shirts extra for each man, as soon as I knew that our destination was the West Indies; and, on our sailing, I issued two of each to every man and boy in the ship, making the officers of each division responsible for the men of their respective divisions wearing these flannels during the day and night; and at the regular morning nine o'clock musters,

I inspected the crew personally; for you can hardly conceive the difficulty I have had in *forcing* some of the men to use flannel at first, although I never yet knew one who did not from choice adhere to it when once fairly adopted. The only precaution after this was to *see* that in bad weather the watch, when relieved, did not turn in in their wet clothes, which the young hands were apt to do, if not looked after; and their flannels were shifted every Sunday.

"Whenever fresh beef and vegetables could be procured at the contract price, they were always issued in preference to salt provisions. Lime juice was issued whenever the men had been fourteen days on ship's provisions; and the crew took all their meals on the main-deck, except in very bad weather.

"The quarter and main decks were scrubbed with sand and water, and wet holystones, every morning at daylight. The lower deck, cockpit, and storerooms were scrubbed every day after breakfast, with dry holystones and hot sand, until quite *white*, the sand being carefully swept up, and thrown overboard. The pump-well was also swabbed out dry, and then scrubbed with holystones and hot sand; and here, as well as in every part of the ship which was liable to damp, Brodie-stoves were constantly used, until every appearance of humidity vanished. The lower-deck and cockpit were washed once every week in dry weather; but Brodie-stoves were constantly kept burning in them, until they were quite dry again.

"The hammocks were piped up and in the nettings from 7 A.M. till dusk, when the men of each watch took down their hammocks alternately; by which means, only one-half of the hammocks being down at a time, the 'tween decks were not so crowded, and the watch relieved were sure of turning into a dry bed on going below. The bedding was aired every week once at least. The men were not permitted to go on shore in the heat of the sun, or where there was a probability of their getting *spirituous liquors;* but all hands were indulged with a run on shore, when out of reach of such temptation.

"I was employed on the coast of Caraccas, the West India Islands, and Gulf of Mexico; and, in course of service, I visited Trinidad, Margarita, Cocho, Cumana, Nueva Barcelona, La Guayra, Porto Cabello, and Maracaybo, on the coast of Caraccas; all the West India Islands from Tobago to Cuba, both inclusive; as also Curaçoa and Oruba, and several of these places repeatedly; also Vera Cruz and Tampico, in the Gulf of Mexico; which you will admit must have given a trial to the constitutions of my men, after two years among the icebergs of Labrador, without an intervening summer between that icy coast and the coast of Caraccas: yet I arrived in England on 24th June without having buried a single man or officer belonging to the ship, or indeed having a single man on the sick list; from which I am satisfied that a *dry* ship will always be a healthy one in any climate. When in command of the Recruit, of 18 guns, in the year 1809, I was sent to Vera Cruz, where I found the —— 46, the —— 42, the —— 18, and —— gun-brig; we were joined by the —— 36, and the —— 18. During the period we remained at anchor (from 8 to 10 weeks), the three frigates lost from 30 to 50 men each, the brigs 16 to 18, the —— most of her crew, with two different commanders; yet the Recruit, although moored in the middle of the squadron, and constant intercourse held with the other ships, did not lose a man, and had none sick. Now, as some of these ships had been as long in the West Indies as the Recruit, we cannot attribute her singularly healthy state to *seasoning;* nor can I to superior cleanliness, because even the breeches of the carronades, and all the pins, were polished bright in both the —— and ——, which was not the case with the Recruit. Perhaps her healthy state may be attributed to cheerfulness in the men; to my never allowing them to go on shore in the morning on an empty stomach; to the use of dry sand and holystone for the ship; to never working them in the sun; perhaps to accident. Were I asked my opinion, I would say that I firmly believe that cheerfulness contributes more to keep a ship's company healthy than any precaution that can be adopted; and that,

with this attainment, combined with the precautions I have mentioned, I should sail for the West Indies with as little anxiety as I would for any other station. My Valorous fellows were as cheerful a set as I ever saw collected together."

Suppose that two gentlemen were to ascend one of the Scottish mountains in a hot summer's day, and to arrive at the top bathed in prespiration and exhausted with fatigue; that one of them knew intimately the physical and organic laws, and that, all hot and wearied as he was, he should button up his coat closer about his body, wrap a handkerchief round his neck, and continue walking, at a quick pace, round the summit, in the full blaze of the sun;—but that the other, ignorant of these laws, should eagerly run to the base of a projecting cliff, stretch himself at full length on the turf under its refreshing shade, open his vest to the grateful breeze, and give himself up entirely to the present luxuries of coolness and repose:—the former, by warding off the rapid chill of the cold mountain air, would descend with health unimpaired; while the latter would most probably carry with him the seeds of rheumatism, consumption, or fever, from allowing perspiration to be instantaneously checked, and the surface of the body to be cooled with an injurious rapidity. The death of the young Duke of Leuchtenberg, husband of Donna Maria, Queen of Portugal, was the consequence of imprudence like this. On Monday, the 23d of March 1835, being in perfect health, he went out to shoot. On returning to the palace he threw off his coat and waistcoat, while in a state of profuse perspiration. This brought on a cold, slight at first, but which soon began to assume a serious character. On Friday the 27th, inflammation appeared; and on Saturday the 28th he expired.

The following case, also illustrative of the points under consideration, is one which I had too good an opportunity of observing in all its stages.

A person in whom it was my duty as well as pleasure to be greatly interested, resolved to carry Mr Robert Owen's views

into practical effect, and set on foot an establishment on his principles, at Orbiston, in Lanarkshire. The labour and anxiety which he underwent at the commencement of the undertaking, gradually impaired an excellent constitution; and, without perceiving the change, he, by way of setting an example of industry, took to digging with the spade, and actually wrought for fourteen days at this occupation, although previously unaccustomed to labour. This produced hæmoptysis, or spitting of blood. Being now unable for such severe exertion, he gave up his whole time to directing and instructing the people—about 250 in number,—and for two or three weeks *spoke the whole day*, the effusion of blood from his lungs continuing. Nature sank rapidly under this irrational treatment, and at last he came to Edinburgh for medical advice. When the structure and uses of his lungs were explained to him, he saw that his treatment of them had been equally injudicious as if he had thrown lime or dust into his eyes after inflammation. He was struck with the extent and consequences of his ignorance, and exclaimed, "How greatly should I have been benefited, if one month of the five years which I was forced to spend in a vain attempt to acquire the Latin language, had been dedicated to conveying to me information concerning the structure of my body, and the causes that preserve and impair its functions!" He had departed too widely from the organic laws to admit of an easy return: he was seized with inflammation of the lungs, and with great difficulty survived that attack; but it impaired his constitution so grievously, that he died after a lingering illness of eleven months. He acknowledged, however, even in his severest pain, that he suffered under a just law. The lungs, he perceived, were of prime importance to life, and a motive to their proper treatment was provided by instituting the painful consequences which followed from neglecting the conditions requisite to their health. Had he given them rest, and returned to obedience to the organic law at the first intimation of departure from it, the way to recovery was open; but in

ignorance, he persevered for weeks in direct opposition to the law, till the melancholy result ensued.

This last case affords a striking illustration of a principle already noticed—namely, *the independence of the different natural laws*, and the necessity of obeying *all* of them as a condition of safety and enjoyment. The person here mentioned was deeply engaged in a most benevolent and disinterested experiment for promoting the welfare of his fellow-creatures; and superficial observers would say that this was just an example of the inscrutable doings of Providence, which visited him with sickness, and ultimately with death, in the very midst of his most virtuous exertions. But the institutions of the Creator are wiser than the imaginations of such men. The first condition on which life and all its advantages depend, is obedience to the physical and organic laws. The benevolent Owenite, in his zeal to obey the moral law, neglected these, and suffered the consequences of his omission.

Some hold that it is a question purely of discretion or prudence to obey or disobey the physical and organic laws, and that to attain an important and moral object we are justified in setting them at defiance. But in my opinion, it is *impossible* to set them at defiance with success; in other words, to escape from the consequences which God has attached to the infringement of them. In cases in which we may be unavoidably ignorant of the natural laws, or be uncertain concerning the limit of our own ability to obey them, we may be *morally* justifiable in encountering the hazard of an infraction of them in the pursuit of a high and virtuous aim; but we must never lose sight of the fact, that, if we do miscalculate and infringe them, the merits of our motives will not save us from the appointed consequences.

If we know the laws, it is our duty in every case to obey them as far as we can. A young medical practitioner danced at a ball all night, exhausted his organic system by fatigue, and in this condition, without sleeping and without taking food, proceeded to pay an early visit to a patient labouring

under typhus fever. The object was a moral one, and he obeyed the call of professional duty; but what was the consequence? Within twenty-four hours of his visit he was seized with the same fever, and in ten days he died. Who gained by his thus setting the organic laws at defiance at the call of duty? Obviously not the patient, for he never saw him again; not the medical practitioner, for he died; and not society, for it lost a valuable member.

Let me not, however, be misunderstood. I do not teach that, in order to avoid infringement of the organic laws, every one should fly from a patient affected with a contagious disease. My doctrine is simply this—that in attending such a patient, every requisite of the organic laws which tends to diminish susceptibility of infection should be religiously complied with. The midnight dancing, by exhausting the body, prepared it to receive infection, and the want of food and sleep deprived it of a resisting power. If the young man had believed in the natural laws, he would either have avoided the ball, knowing his liability to be called on at all hours to visit patients labouring under dangerous diseases; or have gone home to bed, and requested an unexhausted and well fortified friend to visit the patient that morning in his place. The physical and organic laws, having been instituted by the same God who appointed the moral laws, are not likely to be inconsistent with them, nor so unimportant that we may justifiably treat them with disregard, according to our own short-sighted views either of expediency or duty. If it were possible to evade the consequences of one law by obeying another, the whole field of Man's existence would be involved in inextricable disorder.

Another case was communicated to me by an actual observer. A gentleman far advanced in years fell into a state of bodily weakness which rendered the constant presence of an attendant necessary. A daughter, in whom the organs of adhesiveness, benevolence, and veneration were largely developed, devoted herself to this service with ceaseless assiduity. She was his companion for month after month, and year after

year—happy in cheering the last days of her respected parent, and knowing no pleasure equal to that of solacing and comforting him. For months in succession she never went abroad from the house; her duty became dearer to her the longer she discharged it, till at length her father became the sole object on earth of her feelings and her thoughts. The superficial observer would say that this conduct was admirable, and that she would receive from Heaven a rich reward for such becoming and virtuous devotion. But Providence rules on other principles. Her enjoyment of mental happiness and vigour depended on the condition of her brain, and her brain was subject to the organic laws. These laws demand, as an indispensable condition of health, exercise in the open air, and variety of employment, suited to maintain all the faculties in activity. She neglected the first in her constant attendance in her father's chamber; and she overlooked the second in establishing him as the exclusive object of her regard. The result was, that she fell into bad health, with weakness of the brain, extreme irritability and susceptibility of mind, excessive anxiety and hysteria, bordering on symptoms even of insanity. At last some judicious friends interfered, and by forcing her (for it was much against her inclination) to leave for a time the object of her solicitude, they rescued her from death or confirmed mental derangement. If this case had been allowed to proceed uninterruptedly to its natural termination, many pious persons would have marvelled at the mysterious dispensations of Providence in afflicting so dutiful a daughter; whereas, when the principle of the Divine government is understood, the result appears neither wonderful nor perplexing.

Those who maintain that we are justified in setting the physical and organic laws at defiance for an adequate moral object, should reflect on this case. Here every moral consideration dictated the line of conduct which the daughter pursued; but whom did she benefit by disregarding the organic laws of health? Not her father—because, by infringing them, she not only rendered herself incapable of

soothing his declining years, but actually embittered them, by presenting to him the prospect of her own death or insanity as the result of her devotion to him. Not herself—because, by becoming, through her own acts, incapable of discharging her duty, she was mortified, disappointed, and distressed: besides, she endured great suffering in her own person, as the consequence of her conduct. Did she honour God, in devoting herself immoderately to her moral duties? No, because He required her, while she did so, to obey also His organic laws, obedience to which was quite compatible with fulfilment of the moral law; and hence she yielded to Him only half obedience.

In the works of religious authors may be found many erroneous views of Divine dispensations, traceable to ignorance of the natural laws. The Rev. Ebenezer Erskine, speaking of the state of his wife's mind, says: "For a month or two the arrows of the Almighty were within her, the poison whereof did drink up her spirits; and the terrors of God did set themselves in array against her." He called in the assistance of some neighbouring clergymen to join in prayers on her behalf, and she was induced to pray with them; but "she still continued to charge herself with the unpardonable sin, and to conclude that she was a castaway." Such feelings, occurring in a woman of blameless life, clearly indicated diseased action in the organs of cautiousness. "Before she fell into these depths," he continues, "she told me that the Lord gave her such a discovery of the glory of Christ as darkened the whole creation, and made all things appear as dung and dross in comparison of Him." These expressions indicate morbid excitement of the organs of wonder and veneration. She subsequently recovered her mental serenity; and her husband treats the whole phenomena as purely mental and religious. He, however, afterwards incidentally mentions that she was subject to bad health, and that "melancholy was a great ingredient in her disease." We now know that melancholy is a consequence of certain diseases either directly or sympathetically affecting the brain.

At the time when Mr Erskine lived and wrote, the physiology of the brain was unknown, and the occurrences which he describes had a real existence. He is therefore not deserving of censure for the errors into which he unavoidably fell; but now, when the facts which he describes, and analogous occurrences in our own day, can be traced to diseased action of the organs of the mind, we are authorised to view the providence of God in a different light.

It is further mentioned in the Life of Mr Erskine, that his wife bore several children to him while she was in precarious health, and that the situation "of the manse or parsonage-house was *unwholesome.*" We are told also, that in the year 1713 three of his children died; that one died in 1720; and that in 1723 a fifth was on the brink of death, but recovered.* He treats of all these events as "severe trials" and "sore afflictions," without having the least glimpse of their true causes, or their relation to the natural laws.

Another illustration may be added. Hannah More, in a letter to the Rev. John Newton, dated Cowslip Green, 23d July 1788, says: "When I am in the great world, I consider myself as in an enemy's country, and as beset with snares, and this puts me upon my guard. . . . Fears and snares seem necessary to excite my circumspection; for it is certain that my mind has more languor, and my faith less energy here, where I have no temptations from without, and where I live in the full and constant perusal of the most beautiful objects of inanimate nature, the lovely wonders of the munificence and bounty of God. Yet, in the midst of His blessings, I should be still more tempted to forget Him were it not for frequent nervous headaches and low fevers, which I find to be wonderfully wholesome for my moral health."†

This passage contains several propositions that merit attention. First, in all well constituted and rightly instructed minds, "the most beautiful objects of inanimate

* Life and Dairy of the Rev. Ebenezer Erskine (Edinburgh, 1831), pp. 266, 286, 290, 301, 320.

† Memoirs of Hannah More, vol. ii. pp. 110, 111.

nature," and "the lovely wonders of the munificence and bounty of God," are calculated, according to the natural laws, to invigorate the moral, religious, and intellectual faculties; yet Hannah More's mind "had more languor, and her faith less energy," amidst such objects, than "when beset with snares:" Secondly, according both to the natural laws and to Scripture, "evil communications corrupt good manners;" but "when in the great world," and "in an enemy's country," her faith was improved: And, thirdly, although "nervous headaches and low fevers" are the consequences of departures from the organic laws, and are intended to reclaim the sufferer to obedience, that the pain may cease—yet she "found them wonderfully wholesome for her moral health," and they prevented her from "forgetting God"!

Only disease, or errors in education, could have induced a woman so intelligent, so pious, and so estimable as Hannah More, to present to the world such a series of propositions. Can we wonder that the profane should sneer, and that practical religion should advance slowly, when piety exhibits itself in such lamentable contradiction to the Divine institutions; and still more so, when, from proceeding on a false theory, it contradicts itself? In her Journal, in 1794, she writes: "Confined this week with four days' headache;—an unprofitable time—thoughts wandering—little communion with God. *I see by every fresh trial, that the time of sickness is seldom the season for religious improvement.* This great work should be done in health, or it will seldom be done well."* This passage is full of sound sense; but it contradicts her previous assertion, that "nervous headaches and low fevers are wonderfully wholesome for moral health." If Hannah More had believed that God had instituted the corporeal organs, and imposed on her the obligation of fulfilling the conditions of health, she could not, with her strong sentiment of veneration and excellent intellect, have acted and written as she did.

* Memoirs, vol. ii. p. 418.

These examples, to which many more might be added, may serve as illustrations of the proposition, That without a philosophy of human nature, even religious authors, when treating of sublunary events, cannot always preserve consistency either with reason or with themselves; and that hence religion can never become thoroughly practical, or put forth its full energies for human improvement, until it be wedded to philosophy. In proportion as men shall become acquainted with the natural laws, and apply them as tests to theological writings relative to this world, they will become convinced of the truth of this observation.

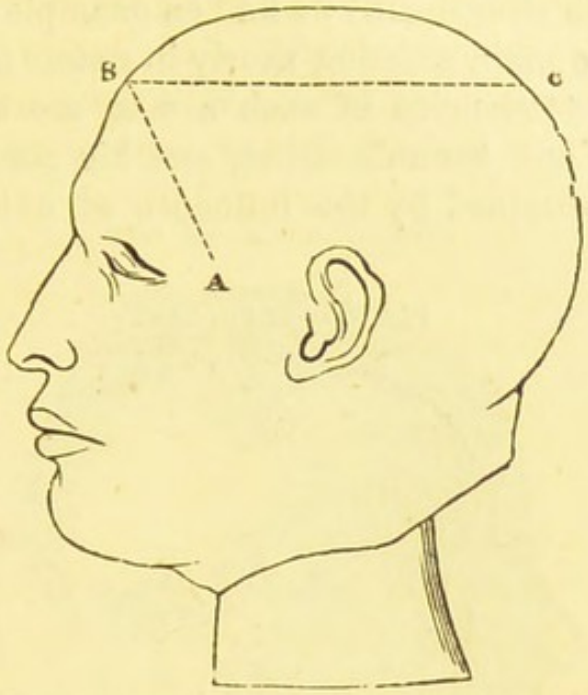
Having traced bodily suffering, in the case of individuals, to neglect of, or opposition to, the organic laws, by their progenitors or by themselves, I next advert to another order of calamities, which may be called SOCIAL MISERIES, and which obviously spring from similar causes. And first, in regard to evils of a *domestic* nature:—

One fertile source of unhappiness arises from persons uniting in marriage, whose tempers, talents, and dispositions do not harmonize. If it be true that natural talents and dispositions are connected by the Creator with particular configurations of the brain, then it is obviously one of His institutions, that, in forming a compact for life, these configurations should be attended to. The following facts I regard as being fully established by competent evidence. The portion of the brain before the line A B, Fig. 1, manifests the intellect, that above BC manifests the moral sentiments, and all the rest the animal sentiments and propensities; and each part acts with a degree of energy corresponding, *cæteris paribus*, to its size. The following figures exhibit these regions of the head in different proportions in different individuals; and the lives of the persons represented show that their dispositions corresponded with their brains.

The first is a view of the head of William Hare, the associate of Burke, who, acting in concert with him, strangled

sixteen persons in Edinburgh, for the purpose of selling their bodies for dissection.*

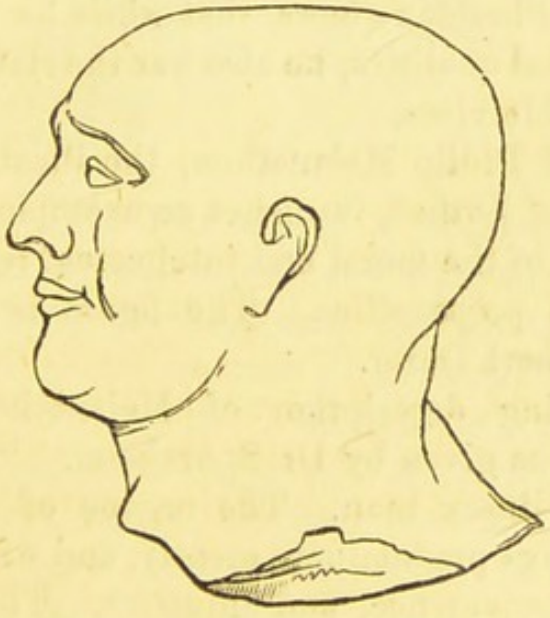
FIG. 1.—HARE.



In this head the organs of the animal propensities decidedly preponderate over those of the moral sentiments and intellect.

Another example of the same kind is afforded by the head of Williams, who was executed along with the noto-

FIG. 2.—WILLIAMS.



* See Phrenological Journal, vol. v. p. 570, and vol. vi. p. 1.

rious Bishop, in London, for the same crime as that of Hare.*

In the head of Richard Brinsley Sheridan (of which a cast was taken after death) we find an example of these three regions of the brain existing nearly in a state of equilibrium. The natural tendencies of such a man are equally strong towards vice and towards virtue, and his actual conduct is generally determined by the influence of external circumstances.

FIG. 3.—SHERIDAN.



The life of Sheridan shows, that while he possessed some high intellectual qualities, he also was the slave of degrading and discreditable vices.

The head of Philip Melancthon, the illustrious Reformer and associate of Luther, furnishes an example of the decided predominance of the moral and intellectual regions over that of the animal propensities. The figure is copied from a portrait by Albert Durer.

The following description of Melancthon's head and character is thus given by Dr Spurzheim. "It is the brain of an extraordinary man. The organs of the moral and religious feelings predominate greatly, and will disapprove of all violence, irreverence, and injustice. The forehead be-

* See Phrenological Journal, vol. vii. p. 446.

tokens a vast and comprehensive understanding; and the *ensemble* a mind the noblest, the most amiable, and the most intellectual that can be conceived. . . . Never was any man more civil and obliging, and more free from jealousy, dissimulation, and envy, than Melancthon: he was humble, modest, disinterested in the extreme; in a word, he possessed wonderful talents, and most noble dispositions. His

FIG. 4.—MELANCTHON.

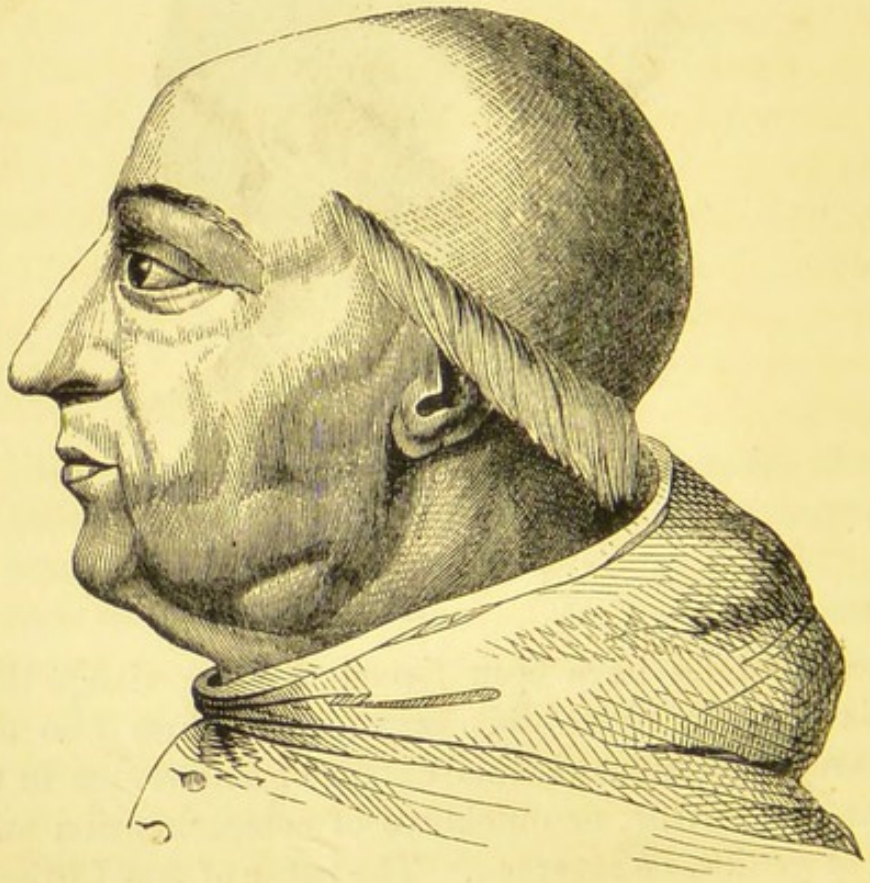


greatest enemies have been forced to acknowledge that the annals of antiquity exhibit very few worthies who may be compared with him, whether extent of knowledge in things human and divine, or quickness of comprehension and fertility of genius, be regarded. The cause of true Christianity derived more signal advantages, and more effectual support, from Melancthon, than it received from any of the other doctors of the age. His mildness and charity perhaps carried him too far at times, and led him occasionally to make concessions that might be styled imprudent. He was

the sincere worshipper of truth, but he was diffident of himself, and sometimes timorous without any sufficient reason. On the other hand, his fortitude in defending the right was great. His opinions were so universally respected, that scarcely any among the Lutheran doctors ventured to oppose them. He was inferior to Luther in courage and intrepidity, but his equal in piety, and much his superior in learning, judgment, meekness, and humanity. He latterly grew tired of his life, and was particularly disgusted with the rage for religious controversies, which prevailed universally."*

With the head of Melancthon may be contrasted that of Pope Alexander VI.

FIG. 5.—POPE ALEXANDER VI.



"This cerebral organisation," says Dr Spurzheim, "is despicable in the eyes of a phrenologist. The animal organs

* Phrenology in Connection with the Study of Physiognomy, by G. Spurzheim, M.D., pp. 160–164; London, 1826.

compose by far its greatest portion. Such a brain is no more adequate to the manifestation of Christian virtues, than the brain of an idiot from birth to the exhibition of the intellect of a Leibnitz or a Bacon. The cervical and whole basilar region of the head are particularly developed; the organs of the perceptive faculties are pretty large; but the sincipital (or coronal) region is exceedingly low, particularly at the organs of benevolence, veneration, and conscientiousness. Such a head is unfit for any employment of a superior kind, and never gives birth to sentiments of humanity. The sphere of its activity does not extend beyond those enjoyments which minister to the animal portion of human nature.

"Alexander VI. was, in truth, a scandal to the papal chair; from the earliest age he was disorderly and artful, and his life to the last was infamous. He is said to have bought the tiara by bribing a certain number of cardinals, or rather by making large promises, which he never fulfilled. It is well known that, when he became pope, he had a family of five children, four boys and one daughter. He made a regular practice of selling bishoprics and other ecclesiastical benefices, to enrich himself and his family. Though profane and various religious writers do not all agree in their judgment concerning the disorderly conduct of this man, many atrocities committed by him are well-ascertained facts. History will always accuse him of the crimes of poisoning, simony, and false-swearing, of reckless debauchery, nay, of incest with his own daughter. In political matters, he formed alliances with all the princes of his time, but his ambition and perfidy never failed to find him a pretext for breaking his word, and disturbing the peace. . . . As a singular example of Alexander's arrogance, his bull may be mentioned, by which he took upon him to divide the new world between the kings of Spain and Portugal, granting to the former all the territory on the west of an imaginary line passing from north to south, at one hundred leagues distance from the Cape de Verd Islands. Alexander possessed elo-

quence and address; but a total lack of noble sentiments rendered him altogether unfit for his sacred station. Poisoned wine, which had been prepared for certain cardinals whose riches tempted the cupidity of his Holiness, was given him by mistake, and ended his profligate career. Some writers have questioned the truth of this account of Alexander's death, but there is nothing in the relation inconsistent with the acknowledged character of this pontiff. Lowness of feelings and lowness of brain are seen together."*

The demarcations in fig. 1 are not arbitrary. The space before A B corresponds to the anterior lobe of the brain; and the space above B C includes all the convolutions that lie on the upper surface of the brain, and rise higher than the organs of cautiousness, corresponding to nearly the middle of the parietal bones, and of causality, situated in the upper part of the forehead. Generally it is not difficult to distinguish these regions; and a comparison of their relative proportions with the talents and dispositions of individuals, will, I believe, convince any intelligent, honest, and accurate observer, of the truth of the foregoing statements. I have examined the heads or skulls, and casts of the heads or skulls, of several hundred criminals of various countries, and found them all to belong to the classes represented by the heads of Hare and of Sheridan; and I never saw one of them with a brain like that of Melancthon. Neither have I ever seen a man distinguished by high moral and intellectual qualities, presenting a brain like that of Hare. The figures represent nature—not a casual appearance, but forms which, in healthy subjects, are found constantly in combination with the qualities here named; and I ask why Nature, when she speaks to a geologist or a chemist, should be listened to with profound attention, and her revelations recorded for human improvement,—but scouted and despised when she speaks to and is interpreted by phrenologists? It is God who speaks from nature in all its departments; and the brain is as assuredly His workmanship as the Milky Way, with all

* Op. cit. pp. 71–73.

its myriads of suns. If the doctrine before expounded be true, that every faculty is good in itself, that the folly and crime which disgrace human society spring from abuses of the faculties, and that two great causes of the tendency to abuse them are the disproportion of certain parts of the brain to each other, and ignorance of the proper mode of manifesting them, how directly do these considerations go to the root of theology and morals! At present, the effect of organisation in determining the natural dispositions and abilities is altogether denied or neglected by many divines, moralists, and philosophers; yet it is of an importance exceeding that of all other terrestrial influences.

If, under the excitement of passion, a youth endowed with the splendid cerebral development of Melancthon, should unite himself for life to a woman possessing a head like that of Hare or Williams, the effects could not fail to be most disastrous, with respect both to his own happiness and to the qualities of his offspring. In the first place, after the animal feelings were gratified, and their ardour had subsided, the two minds could not possibly sympathize. Many marriages are unhappy in consequence of a natural discord between the modes of feeling and thinking of the husband and wife, the cause of which they themselves cannot explain. The mental differences will be found to arise from different configurations and qualities of brain. Thus, if the husband be deficient in the organ of conscientiousness, and the wife possess it in a high degree, she will be secretly disgusted with the dishonesty and inherent falsehood of his character, which she will have many opportunities of observing, even when they are unknown to the world; while, on the other hand, few conditions are more lamentable than that of a moral, intellectual, and well-educated man, irretrievably doomed to the society of an ignorant, jealous, narrow-minded wife. The following picture, in the thirteenth book of Crabbe's *Tales of the Hall*, is evidently drawn from nature:—

"Five years had pass'd, and what was Henry then?
The most repining of repenting men;

With a fond, teasing, anxious wife, afraid
Of all attention to another paid:
Yet powerless she her husband to amuse,
Lives but t' entreat, implore, resent, accuse.
Jealous and tender, conscious of defects,
She merits little, and yet much expects;
She looks for love that now she cannot see,
And sighs for joy that never more can be.
On his retirements her complaints intrude,
And fond reproof endears his solitude:
While he her weakness (once her kindness) sees,
And his affections in her languor freeze.
Regret, uncheck'd by hope, devours his mind;
He feels unhappy, and he grows unkind.
'Fool! to be taken by a rosy cheek,
And eyes that cease to sparkle or to speak;
Fool! for this child my freedom to resign,
When one the glory of her sex was mine;
While from this burthen to my soul I hide,
To think what Fate has dealt, and what denied.
What fiend possess'd me when I tamely gave
My forced assent to be an idiot's slave?
Her beauty vanish'd, what for me remains?
Th' eternal clicking of the galling chains.'"

"What," says Dr Johnson, "can be expected but disappointment and repentance from a choice made in the immaturity of youth, in the ardour of desire, without judgment, without foresight, without inquiry after conformity of opinions, similarity of manners, rectitude of judgment, or purity of sentiment? Such is the common process of marriage. A youth and maiden meeting by chance, or brought together by artifice, exchange glances, reciprocate civilities, go home, and dream of one another. Having little to divert attention, or diversify thought, they find themselves uneasy when they are apart, and therefore conclude that they shall be happy together. They marry, and discover what nothing but voluntary blindness before had concealed; they wear out life in altercations, and charge nature with cruelty."*

* Rasselas, chap. xxix.

Until Phrenology was discovered, no natural index to mental qualities, that could be relied on, was possessed, and each individual, in directing his conduct, was left to the guidance of his own sagacity. But the natural law never bended to accommodate itself to that state of ignorance. Men suffered from unsuitable alliances; and they will continue to suffer, until they avail themselves of the means of judging afforded by Phrenology, and give effect to its dictates. In the play of *The Gamester*, Mrs Beverly is represented as a most excellent wife, acting habitually under the guidance of the moral sentiments and intellect, but married to a man who, while he adores her, reduces her to beggary and misery. His sister exclaims, "Why did just Heaven unite such an angel to so heartless a creature!" The parallel of this case occurs too often in real life; only it is not "just Heaven" that makes such matches, but ignorant and thoughtless human beings, who imagine themselves absolved from all obligation to study and obey the laws of Heaven, as announced in the general arrangements of the world.

The justice and benevolence of rendering unhappy those who disregard natural qualities in marriage, will become more striking when, in the next place, we consider *the effects of ill-assorted unions on the children.*

Physiologists in general are agreed, that a vigorous and healthy constitution of body in the parents communicates existence in the most perfect state to the offspring; and the reverse. The transmission of various diseases from parents to children is a matter of universal notoriety: thus consumption, gout, scrofula, hydrocephalus, rheumatism, and insanity, are well known to descend from generation to generation. Strictly speaking, it is not *disease* which is transmitted, but organs of such imperfect structure that they are liable to be thrown into a morbid condition by causes which sound organs could easily resist. Blindness is often, though not uniformly, a hereditary defect. There is a family in North America, some members of which have been affected

with blindness for the last hundred years.* A medical friend writes:—"I have known more than one instance of blindness descending in families; and have also known instances where the parents were blind without the children labouring under this infliction."

Form, size, and quality of the brain, as of other parts of the body, are transmissible from parents to children; and hence dispositions and talents are transmissible also, as has long been remarked, not only by medical authors, but by attentive observers in general:—

> "Fortes creantur fortibus et bonis;
> Est in juvencis, est in equis patrum
> Virtus: nec imbellem feroces
> Progenerant aquilæ columbam."
>
> Hor. l. iv. od. 4.

"By a proper attention," says Dr John Gregory, "we can preserve the breed of horses, dogs, cattle, and indeed all other animals. Yet it is amazing this observation was never transferred to the human species, where it would be equally applicable. It is certain that, notwithstanding our promiscuous marriages, many families are distinguished by peculiar circumstances in their character. This family character, like a family face, will often be lost in one generation, and appear again in the succeeding. Without doubt, education, habit, and emulation, may contribute greatly in many cases to keep it up; but it will be generally found, that, independent of these, Nature has stamped an original impression on certain minds, which education may greatly alter or efface, but seldom so entirely as to prevent its traces being seen by an accurate observer. How a certain character or constitution of mind can be transmitted from a parent to a child, is a question of more difficulty than importance. It is indeed equally difficult to account for the external resemblance

* New York Medical Repository, vol. iii. No. 1. See Dr A. Combe's "Management of Infancy," chapter on the Influence of the Constitution of Parents on the Health of their Children.

of features, or for bodily diseases being transmitted from a parent to a child. But we never dream of a difficulty in explaining any appearance of nature which is exhibited to us every day. A proper attention to this subject would enable us to improve not only the constitutions but the characters of our posterity. Yet we every day see very sensible people, who are anxiously attentive to preserve or improve the breed of their horses, tainting the blood of their children, and entailing on them not only the most loathsome diseases of the body, but madness, folly, and the most unworthy dispositions, —and this, too, when they cannot plead being stimulated by necessity, or impelled by passion."*

Dr James Gregory also, in treating of the temperaments, in his *Conspectus Medicinæ Theoreticæ*, chap. i. sect. 16, says: "Hujusmodi varietates non corporis modò, verum et animi quoque, plerumque congenitæ, nonnunquam hæreditariæ, observantur: Hoc modo parentes sæpe in prole reviviscunt; certè parentibus liberi similes sunt, non [quoad] vultum modò et corporis formam, sed animi indolem, et virtutes, et vitia. Imperiosa gens Claudia diu Romæ floruit, impigra, ferox, superba: eadem illachrymabilem Tiberium, tristissimum tyrannum, produxit; tandem in immanem Caligulam, et Claudium, et Agrippinam, ipsumque demum Neronem, post sexcentos annos, desitura."†

A celebrated French writer, who has written much sound as well as false philosophy, observes, that "physical organisation, of which moral is the offspring, transmits the same character from father to son, through a succession of ages. The Apii were always haughty and inflexible, the Catos always severe. The whole line of the Guises were bold, rash, factious; compounded of the most insolent pride and the most seductive politeness. From Francis de Guise to

* Comparative View of the State and Faculties of Man, with those of the Animal World (3d edit., Lond. 1766), pp. 18, 19.

† "Parents frequently live again in their offspring. It is certain that children resemble their parents, not only in countenance and the form of their body, but also in their mental dispositions, in their virtues and vices," &c.

him who, alone and in silence, went and put himself at the head of the people of Naples, they were all, in figure, in courage, and in turn of mind, above ordinary men. I have seen whole-length portraits of Francis de Guise, of the Balafré, and of his son: they are all six feet high, with the same features, the same courage and boldness in the forehead, the eye, and the attitude. This continuity, this series of beings alike, is still more observable in animals; and if as much care were taken to perpetuate fine races of men as some nations still take to prevent the mixing of the breeds of their horses and hounds, the genealogy would be written in the countenance and displayed in the manners."*

Dr King, in speaking of the fatality which attended the House of Stewart, says: "If I were to ascribe their calamities to another cause (than an evil fate), or endeavour to account for them by any natural means, I should think they were chiefly owing to a certain *obstinacy of temper*, which appears to have *been hereditary and inherent* in all the Stewarts except Charles II."

It is well known that of all the castes in Hindostan, that of the Brahmins is the highest in intelligence as well as rank; and it is mentioned by the missionaries as an ascertained fact, that *their* children are naturally more acute, intelligent, and docile, than the children of the inferior castes, age and other circumstances being equal.

Dr John Mason Good remarks, that "stupidity, like wit, is propagable; and hence we frequently see it run from one generation to another, and not unfrequently it forms a distinctive mark in the mental character of districts or nations —in many cases, indeed, where they border closely on each other."†

The character of the mother seems to have great influence in determining the qualities of the children, particularly

* Voltaire's Philosophical Dictionary, article Cato.

† Study of Medicine, 2d edit., vol. iv. p. 187.

when she has much force of character, and is superior in mental energy to her husband. There is perhaps no instance of a man of distinguished vigour and activity of mind whose mother did not display a considerable amount of the same qualities; and the fact of eminent men having so frequently children far inferior to themselves, is in most cases explicable by the circumstance that men of talent often marry women whose minds are comparatively weak. When the mother's brain is very defective, the minds of the children are feeble. "We know," says Haller, "a very remarkable instance of two noble women, who were married on account of their wealth, although they were nearly idiots, and from whom the mental defect has extended for a century into several families, so that some of all their descendants still continue idiots in the fourth and even the fifth generation."* In many families, the qualities of both father and mother are seen blended in the children. "In my own case," says a medical friend, "I can trace a very marked combination of the qualities of both parents. My father is a large-chested, strong, healthy man, with a large but not active brain;—my mother was a spare, thin woman, with a high nervous temperament, a rather delicate frame, and a mind of uncommon activity. Her brain I should suppose to have been of moderate size. I often think that to the father I am indebted for a strong frame and the enjoyment of excellent health, and to the mother for activity of mind and an excessive fondness for exertion. These things, and a hundred more, have been brought to my mind by the perusal of 'The Constitution of Man.'" Finally, it often happens that the mental peculiarities of the father are transmitted to some of the children, and those of the mother to others.

Mental qualities, then, are determined by the size, form, and constitution of the brain; and these are transmitted by hereditary descent. This law, however faint or obscure it may appear in individual cases, becomes absolutely undeniable in nations. When we place in juxtaposition a

* Elem. Physiol., lib. xxix. sec. 2, § 8.

number of Esquimaux, Hindoo, Peruvian, and Swiss skulls, we perceive a national form and combination of organs in each, obtruding itself upon our notice, and corresponding with the mental characters of the respective tribes; the cerebral development of one tribe is seen to differ as widely from that of another, as the European mind does from that of the Hindoo. Each Esquimaux, Hindoo, and Peruvian, inherits from his parents a certain general type of head; and so does each European. And if the general forms of brain are thus palpably transmitted, can we doubt that the individual varieties follow the same rule, modified slightly by causes peculiar to the parents of the individual? The differences of national *character* are as conspicuous as those of national *brain*, and it is surprising how permanently both endure. It is observed by an author cited in the *Edinburgh Review*, that "the Vicentine district is, as every one knows, and has been for ages, an integral part of the Venetian dominions, professing the same religion and governed by the same laws as the other continental provinces of Venice: yet the English character is not more different from the French than that of the Vicentine from the Paduan; while the contrast between the Vicentine and his other neighbour, the Veronese, is hardly less remarkable."*

An undeniable proof of the effect produced on the character and dispositions of children by the form of brain transmitted to them by hereditary descent, is to be found in the progeny of marriages between Europeans whose brains possess a favourable development of the moral and intellectual organs, and Hindoos and American Indians, whose brains are inferior. All authors agree (and report the circumstance as singularly striking), that the children of such unions are decidedly superior in mental qualities to the native, while they are still inferior to the European parent. Sir John Franklin says that the half-breed American Indians "are upon the whole a good-looking people, and, where the experiments have been made, have shown much expertness in

* Edin. Rev., vol. xlii. p. 459. See APPENDIX, No. V.

learning, and willingness to be taught; they have, however, been sadly neglected."* He adds: "It has been remarked, I do not know with what truth, that half-breeds show more personal courage than the pure breeds." The writers on South America mention that the offspring of aboriginal and Spanish parents constitute the most active, vigorous, and powerful portion of the inhabitants of these countries, and that many of them rose to high commands during the revolutionary war. So similar is the case of the mixed race in Hindostan, that several authors have already pointed to them as destined to become the future sovereigns of India. They inherit from the native parent a certain adaptation to the climate, and from the European a higher development of brain; the two combined constituting their superiority.

Another example occurs in Persia. The Circassian and Georgian brain stands comparatively high in the development of the moral and intellectual organs,† and for ages the custom has existed among the Persian nobles of purchasing beautiful female Circassian captives, and forming alliances with them as wives. It is mentioned by some travellers, that the race of nobles in Persia is the most gifted in natura qualities, bodily and mental, of any class in that country; a fact diametrically opposite to that which occurs in Spain, and other European countries, where the nobles intermarry closely with each other, and set the organic laws at defiance. Consanguinity in the parents exerts a deteriorating influence on the children. The degeneracy, and even idiocy, of some of the noble and royal families of Spain and Portugal, from marrying nieces and other near relations, is well known; and in these cases, defective brains may be observed.

If, then, form, size, and constitution of brain, are transmitted from parents to children, and if these determine the natural talents and dispositions, which in their turn exercise

* First Journey, p. 86.

† In Sir W. Allan's picture of "The Circassian Captives," the form of the head is said to be a copy from nature, taken by that artist when he visited the country. It is engraved, and may be studied as an example of superiority of the Circassian development of brain.

the greatest influence on the happiness of individuals through life, it becomes extremely important to discover the laws according to which this transmission takes place. At the first aspect of the question, three views present themselves for our consideration. In the *first* place, Are the constitution, size, and configuration of brain, which the parents themselves inherited at birth, transmitted absolutely, so that the children, sex following sex, are exact copies, without variation or modification, of the one parent or the other? Or, *secondly*, Are the natural and inherent qualities of the father and mother combined, and transmitted in a modified form to the offspring? Or, *thirdly*, Are the qualities of the children determined jointly by the constitution of the stock, and by the faculties which predominate in power and activity in the parents at the particular time when the organic existence of each child commences?

We learn by observation that the *first* is not the law; for, as often mentioned, a real law of nature admits of no exceptions; and it is well established that the brains of children are *not exact copies*, without variation or modification, of those of the parents, sex following sex. Neither can the *second* be the law; because it is equally certain that the brains of children, although *sometimes, are not always*, exactly blended reproductions of those of the father and mother. If this law prevailed, no child would be a copy of the father, none a copy of the mother, or of any collateral relation; but each would be invariably a compound of the two parents, and all the children would be exactly alike, sex alone excepted. Observation enables us to say that this is not the law. What, then, does experience say to the *third* idea, that the form of the brain of each child is determined by the particular qualities of the stock, combined with those which predominated in the parents when its existence commenced?

I have already adverted to the influence of the stock, and shall now illustrate that of the condition of the parents when existence is communicated. For this purpose we may consider,—1*st*, The transmission of factitious or temporary condi-

tions of the body; 2*dly*, The transmission of acquired habits; 3*dly*, The appearance of peculiarities in children, in consequence of impressions made on the mind of the mother; and, 4*thly*, The transmission of temporary mental and bodily qualities.*

1. With respect to the first of these topics, Dr Prichard states the result of his investigation to be, *first*, That the organisation of the offspring is always modelled according to the type of the *original structure* of the parent; and, *secondly*, "That changes produced by external causes in the appearance or constitution of the individual are temporary; and, in general, acquired characters are transient—they terminate with the individual, and have no influence on the progeny."† He supports the first of these propositions by a variety of facts occurring in the Porcupine family, in the hereditary nature of complexion, and in the growth of supernumerary fingers or toes, and corresponding deficiencies. "Maupertuis has mentioned this phenomenon: he assures us, that there were two families in Germany who had been distinguished for several generations by six fingers on each hand, and the same number of toes on each foot," &c. Dr Prichard at the same time admits, that the *second* proposition is of more difficult proof, and that "an opinion contrary to it has been maintained by some writers, and a variety of singular facts have been related in support of it." But many of these relations, as he justly observes, are obviously fables. The following facts, however, certainly militate against it.

A man's first child was of sound mind; afterwards he had a fall from his horse, by which his head was much injured. His next two children proved to be idiots. After this he was trepanned, and had other two children, and they were of sound mind. This case was communicated to me by a medical practitioner of Douglas, in the Isle of Man.

* On these questions the reader will find much information and material for reflection in Mr Darwin's treatise "On the Origin of Species by means of Natural Selection;" London, 1860. See also an article in the "British Quarterly Review" for January 1859.

† Researches into the Physical History of Mankind, vol. ii. p. 536.

"In Europe, the constant practice of milking cows has enlarged the udder greatly beyond its natural size, and so changed the secretions that the supply does not cease when the calf is removed. In Colombia, where circumstances are entirely different, nature shows a strong tendency to assume its original type: a cow gives milk there only while the calf is with her."*

2. There are some curious facts which seem to prove that *acquired habits* are hereditary, at least in the inferior animals. A strong illustration is quoted in the *Edinburgh Review*, vol. xlii. p. 457:—

"Every one, conversant with beasts," says the writer, "knows that not only their natural but that many of their acquired qualities are transmitted by the parents to their offspring. Perhaps the most curious example of the latter fact may be found in the Pointer.

"This animal is endowed with the natural instinct of winding game, and stealing upon his prey, which he surprises, having first made a short pause, in order to launch himself upon it with more security of success. This sort of *semicolon* in his proceedings Man converts into a *full stop*, and teaches him to be as much pleased at seeing the bird or beast drop by the shooter's gun, as at taking it himself. The staunchest dog of this kind, and the original pointer, is of Spanish origin, and our own is derived from this race, crossed with that of the foxhound or other breed of dog, for the sake of improving his speed. This mixed and factitious race, of course, naturally partakes less of the true pointer character; that is to say, is less disposed to stop, or at least, he makes a shorter stop at game. *The factitious pointer is, however, disciplined, in this country, into staunchness; and, what is most singular, this quality is, in a great degree, inherited by his puppy*, who may be seen earnestly standing at swallows or pigeons in a farm-yard. For intuition, though it leads the offspring to exercise his parent's faculties, does not instruct him how to direct them. The

* Encyclop. Brit., 7th edit., vol. ii. p. 653, article AMERICA.

preference of his master afterwards guides him in his selection, and teaches him what game is better worth pursuit. On the other hand, the pointer of pure Spanish race, unless he happens to be well broke himself, which in the south of Europe seldom happens, produces a race which are all but unteachable, according to our notions of a pointer's business. They will make a stop at their game, as natural instinct prompts them, but seem incapable of being drilled into the habits of the animal which education has formed in this country, and has rendered, as I have said, in some degree capable of transmitting his acquirements to his descendants.

"Acquired habits are hereditary in other animals besides dogs. English sheep, probably from the greater richness of our pastures, feed very much together; while Scotch sheep are obliged to extend and scatter themselves over their hills for the better discovery of food. Yet the English sheep, on being transferred to Scotland, *keep their old habit of feeding in a mass*, though so little adapted to their new country: so do their descendants; and the English sheep is not thoroughly naturalised into the necessities of his place *till the third generation*. The same thing may be observed as to the nature of his food, that is observed in his mode of seeking it. When turnips were introduced from England into Scotland, *it was only the third generation* which heartily adopted this diet, the first having been starved into an acquiescence in it."

It has been remarked also that in Spanish America, the amble, the pace to which the domestic horse is there exclusively trained, becomes in the course of some generations hereditary, and is assumed by the young ones without teaching.*

3. *Impressions on the mind of the mother*, especially those received through the senses, often produce a palpable effect on the offspring. On this subject Dr Prichard observes: "The opinion which formerly prevailed, and which has been entertained by some modern writers, among whom is Dr Darwin, that at the period when organisation commences in

* Encyclopædia Britannica, *loc. ci*

the ovum—that is, at or soon after the time of conception—the structure of the fœtus is capable of undergoing modification from impressions on the mind or senses of the parent, does not appear altogether so improbable. It is contradicted, at least, by no fact in physiology. It is an opinion of very ancient prevalence, and may be traced to so remote a period, that its rise cannot be attributed to the speculations of philosophers, and it is difficult to account for the origin of such a persuasion, unless we ascribe it to facts which happened to be observed." (P. 556.)

The following case fell under my own observation:—W. B., a shoemaker in Edinburgh, called and showed me his son, aged 18, who was in a state of idiocy. He was simple and harmless, but never could do anything for himself. The father said that his wife was sound in mind; that he had three other children all sound; and that the only account he could ever give of the origin of the condition of this son was the following: He kept a small tavern; and some months before the birth of this boy, an idiot lad came to his house with a brewer's drayman, and helped him to lift casks off the cart into the cellar. The idiot made a strong impression on his wife; and she complained that she could not get his appearance removed from her mind, on which account she afterwards kept out of the way when he came to the house. The son was weak in body and silly in mind from birth, and had the slouched and slovenly appearance of the idiot.

"It is peculiarly lamentable to observe," says Dr Mason Good, in reference to deafness and dumbness, "that, when the defect has once made an entrance into a family, whether from the influence it produces on the nervous system of the mother, or from any other less obvious cause, it is particularly apt to become common to those children which are born afterwards; insomuch that we often meet with a third, or a half, and, in a few instances, where the first-born has been thus affected, with every individual of the progeny, suffering from the same distressing evil. 'The late investigation

in Ireland discovered families in which there were two, three, four, or more, thus circumstanced. In one family, there were five children all deaf and dumb; in another, seven; in another, ten: and, in that of a poor militia officer on half-pay, there were nine born deaf and dumb in succession.'* Yet it is consoling to reflect, that the defect is not always propagated to a succeeding generation, when the deaf-dumb have married, and even when both the husband and wife have been thus afflicted."†

Another writer says:—"Many persons who have never known any, or perhaps not more than one, deaf and dumb individual in the immediate circle in which they lived, would be astonished to read the lists of applications circulated by the committee for the asylum in the Kent Road, so ably conducted by Mr Watson, which usually contain nearly a hundred names. The most remarkable fact, however, which these lists present, is the number of deaf and dumb children frequently found in the same families, evidently in consequence of the continued operation of some unknown cause connected with the parents. Three, four, and five deaf and dumb children are not uncommonly met with in one family, and in some instances there have been as many as seven. In the family of Martin, a labourer, out of ten children seven were deaf and dumb; in the family of Kelly, a porter, seven out of eight were deaf and dumb; and in the family of Aldum, a weaver, six out of twelve were deaf and dumb. The result of a table of twenty families, given in the 'Historical Sketch of the Asylum,' published by Powell, Dowgate Hill, is 90 deaf and dumb out of 159 children."‡

A medical friend informs me that several of the children of a clergyman in the West of Scotland have been born

* Quart. Jour. of Foreign Med., vol. i. p. 321.

† Good's Study of Medicine, 4th edit., vol. i. p. 419. The editor, Mr Samuel Cooper, adds: "Still, it is said that such propagation is not uncommon (Edin. Med. Jour., vol. vii. p. 62); and as deafness is, without doubt, often hereditary, the experiment of marriage should be carefully avoided."

‡ Athenæum, 28th May 1825, p. 498.

blind ; that he knows a family of four girls and two boys, in which all the girls were born blind, while the boys see perfectly. Both parents had good eyesight, so far as my friend could learn. Portal states, that Morgagni had seen three sisters dumb "*d'origine.*" Other authors also cite examples, and he had seen like cases himself. In a note he adds : "I have seen three children out of four of the same family blind from birth by amaurosis, or *gutta serena.*"*

Dr Prichard, in his *Researches*, already quoted, observes : "Children resemble, in feature and constitution, both parents, but I think more generally the father. In the breeding of horses and oxen, great importance is attached, by experienced propagators, to the male. In sheep, it is commonly observed that black rams beget black lambs. In the human species, also, the complexion chiefly follows that of the father; and I believe it to be a general fact, that the offspring of a *black father* and white mother is *much darker* than the progeny of a *white father* and a dark mother." (Vol. ii. p. 551.)† These facts appear to me to be referrible to both causes. The stock must have had some influence ; but the mother, in all these cases, is not impressed by her own colour, because she does not look on herself ; while the *father's* complexion most strikingly attracts her attention, and may, in this way, give the darker tinge to the offspring.‡

4. The theory of the transmission of *temporary mental and bodily qualities*, is supported by numerous facts tending to show that the state of the parents, particularly of the mother, at the time when the existence of the child commences, has a strong influence on its talents, dispositions, and health.

The father of Napoleon Buonaparte, says Sir Walter Scott, "is stated to have possessed a very handsome person, a talent for eloquence, and a vivacity of intellect, which he transmitted to his son. It was in the middle of civil discord,

* Portal, Mémoires sur Plusieurs Maladies, tom. iii. p. 193 ; Paris, 1808.

† See APPENDIX, No. VI.

‡ Black hens, however, lay dark-coloured eggs.

fights, and skirmishes, that Charles Buonaparte married Lætitia Ramolini, one of the most beautiful young women of the island, and possessed of a great deal of firmness of character. She partook of the dangers of her husband during the years of civil war, and is said to have accompanied him on horseback on some military expeditions, or perhaps hasty flights, shortly before her being delivered of the future Emperor."*

The murder of David Rizzio was perpetrated by armed nobles, with many circumstances of violence and terror, in the presence of Mary, Queen of Scotland, shortly before the birth of her son, afterwards James I. of England. The constitutional temerity of this monarch is recorded as a characteristic, and it has been mentioned that he even started involuntarily at the sight of a drawn sword. Queen Mary was not deficient in courage, and the Stewarts, both before and after James I., were distinguished for this quality; so that his timid disposition was an exception to the family character. Napoleon and James form striking contrasts; and it may be remarked that the mind of Napoleon's mother appears to have risen to the danger to which she was exposed, and braved it; while the circumstances in which Mary was placed were such as must have inspired her with violent fear.

Esquirol, a celebrated French physician, in treating of the causes of mental derangement, mentions that many children, whose existence dated from periods when the horrors of the French Revolution were at their height, subsequently became weak, nervous, and irritable in mind, extremely susceptible of impressions, and liable to be thrown, by the least extraordinary excitement, into absolute insanity.

A lady of much force of character writes thus to a phrenological friend:—" From the age of two I foresaw that my eldest son's restlessness would ruin him; and it has been even so. Yet he was kind, brave, and affectionate. I read the Iliad for six months before he saw the light, and have

* Life of Napoleon Buonaparte, vol. iii. p. 6.

often wondered if that could have any influence on him; he was actually an Achilles."*

"I know," says the medical friend already referred to, "an old gentleman who has been twice married. The children of his first marriage are strong, active, healthy people, and their children are the same. The produce of the second marriage are very inferior, especially in an intellectual point of view; and the younger the children are, the more is this obvious. The girls are superior to the boys, both physically and intellectually: indeed, their mother told me that she had great difficulty in rearing her sons, but none with her daughters. The gentleman himself, at the time of his second marriage, was upwards of sixty, and his wife about twenty-five. This shows very clearly that the boys have taken chiefly of the father, and the daughters of the mother."

In a case which fell under my own observation, the father of a family became sick, had a partial recovery, but relapsed, declined in health, and in two months died. Seven months after his death a son was born, of the full age, and the origin of whose existence was referrible to the period of the partial recovery. At that time, and during the subsequent two months, the mental faculties of the mother were highly excited in ministering to her husband, to whom she was greatly attached; and after his death the same excitement continued, as she was then loaded with the charge of a numerous family, but, her circumstances being comfortable was not depressed. The son is now a man; and, while his constitution is the most delicate, the development and activity of the mental organs are decidedly greater in him than in any other member of the family.

A lady possessing a large brain and active temperament, was employed professionally as a teacher of music. Her husband also had a fine temperament and a well-constituted

* This lady's head is large; in particular, the organs of combativeness, self-esteem, and firmness, are very large; those of destructiveness and adhesiveness are large; and the temperament is very active.

brain, but his talents for music were only moderate. They had several children, all of whom were produced while the mother was in the full practice of her profession, and all now indicate superior musical abilities. They have learned to play on several instruments as if by instinct, and highly excel. In this case the original endowments of the mother, and her actual exercise of them, conspired to transmit them to her children.

A friend told me that in his youth he lived in a county in which the gentlemen were much addicted to hard drinking, and that he too frequently took a part in their revels. Several of his sons, born at that time, although morally educated, became strongly addicted to inebriety; whereas the children born after he had removed to a large town, and formed more correct habits, were not the victims of this propensity. Another person, of superior talents, described to me the wild and mischievous revelry in which he indulged at the time of his marriage, and congratulated himself on his subsequent domestication and moral improvement. His eldest son, born in his riotous days, became, notwithstanding a strictly moral education, a personification of the father's actual condition at that time; while his younger children were more moral in proportion as they were removed from the period of his vicious frolics. The mother, in this case, possessed a favourable development of brain.

The Margravine of Anspach observes, that "when a woman is likely to become a mother, she ought to be doubly careful of her temper; and, in particular, to indulge no ideas that are not cheerful, and no sentiments that are not kind. Such is the connection between the mind and body, that the features of the face are moulded commonly into an expression of the internal disposition; and is it not natural to think that an infant, before it is born, may be affected by the temper of its mother?"*

When two persons marry very young, the eldest of their children generally inherits a less favourable development of

* Memoirs, vol ii. chap. viii. See APPENDIX, No. VII.

the moral and intellectual organs than those produced in mature age. The animal organs in the human race are, in general, most vigorous in early life, and this energy appears to cause them to be then more strongly transmitted to offspring. Indeed, it is difficult to account for the wide varieties in the form of the brain in children of the same family, except on the principle that the organs which predominate in vigour and activity in the parents, at the time when existence begins, determine the tendency of corresponding organs to develop themselves largely in the children. The facts illustrative of the truth of this principle, which have been communicated to me and observed by myself, are so numerous, that I regard it as highly probable.

If this be the law of nature, parents in whom combativeness and destructiveness are habitually active will transmit the organs of these faculties to their children, with a constitutional tendency to high development and excitement; while parents in whom the moral and intellectual faculties reign supreme will transmit the organs of these in predominant size and activity.

This view is in harmony with the fact, that children generally, although not universally, resemble their parents in their mental qualities. The largest organs being naturally the most active, the habitual mental condition of the parents will be determined by those which predominate in size in their own brains; and, on the principle that predominance in activity and energy causes the transmission of similar qualities to the offspring, the children will generally resemble the parents. But they will not always do so; because even inferior characters, in whom the moral and intellectual organs are deficient, may be occasionally exposed to external influences which, for the time, may excite these organs to unwonted vivacity; and, according to the rule now explained, a child dating its existence from that period may inherit a brain superior to that of the parent. On the other hand, a person with an excellent moral development, may, by some particular occurrence have his animal propensities roused

to more than usual vigour, and his moral sentiments thrown for a time into the shade; and any offspring connected with this condition would prove inferior to himself in the development of the moral organs, and greatly surpass him in the size of those of the propensities.

It is a general remark, that talent is not always hereditary. Two explanations may be offered of this fact. If the mental superiority belong only to one of the parents, it may disappear in those of the children who most closely resemble the other. Or, what also is a common occurrence, very energetic minds neglect the laws of health, exhaust and wear out the vital organs of the body, and hence transmit feeble constitutions to their offspring.

I repeat, that I do not present these views as ascertained phrenological science, but as inferences strongly supported by facts, and consistent with known phenomena. If we suppose them to be true, they will greatly strengthen the motives for preserving the *habitual* supremacy of the moral sentiments and intellect; since, by our doing so, improved moral and intellectual capacities may be conferred on offspring. If the world is arranged in harmony with all the faculties,—the moral and intellectual powers, in cases of conflict, holding the supremacy,—what a noble prospect would this law open up, of the possibility of Man's ultimately becoming capable of placing himself more fully in accordance with the Divine institutions than he has hitherto been able to do, and, in consequence, of reaping numberless enjoyments that appear destined for him by his Creator, and avoiding thousands of miseries that now render life too often only a series of calamities! The views here expounded also harmonize with the principle maintained in a former part of this work—that, as activity in the faculties is the fountain of enjoyment, the whole constitution of nature is designedly framed to support them in that state. What scope for observation, reflection, exercise of the moral sentiments, and the regulation of animal impulse, does not this picture of nature present

I cordially agree, however, with Dr Prichard, that this subject is still involved in great obscurity. "We know not," says he, "by what means any of the facts we remark are effected: and the utmost we can hope to attain is, by tracing the connection of circumstances, to learn from what combinations of them we may expect to witness particular results." (Vol. ii. p. 542.) But much of this darkness may be traced to ignorance of the functions of the brain. If we consider that, in relation to mind, the brain has always been the most important organ of our system, but that, nevertheless, all but recent observations have been conducted without the knowledge of its functions, it will not appear marvellous that hitherto much confusion and contradiction have existed in the cases recorded, and in the inferences drawn from them. At present, almost all that phrenologists can pretend to accomplish is, to point out the mighty void; to offer an exposition of its causes; and to state such conclusions as their own very limited observations have hitherto enabled them to deduce. Far from pretending to possess certain and complete knowledge on this topic, I am inclined to think, that, although every conjecture now hazarded were founded in nature, centuries of observation would probably be necessary to render the principles fully practical. We have still almost no information concerning the effects, on the children, of different temperaments, different combinations in the cerebral organs, and differences of age, in the parents.

It is remarkable, however, to what extent mere pecuniary interest excites men to investigate and observe the natural laws, while moral and rational considerations exert so small an influence in leading them to do so. Before an insurance company will undertake the risk of paying L.100 on the death of any one, the following or similar questions must be answered by credible and intelligent witnesses:—

"1. How long have you known Mr A. B.?

"2. Has he had the gout?

"3. Has he had a spitting of blood, asthma, consumption, or other pulmonary complaint?

"4. Do you consider him at all predisposed to any of these complaints?

"5. Has he been afflicted with fits, or mental derangement?

"6. Do you think his constitution perfectly good, in the common acceptation of the term?

"7. Are his habits in every respect strictly regular and temperate?

"8. Is he at present in good health?

"9. Is there anything in his form, habits of living, or business, which you are of opinion may shorten his life?

"10. What complaints are his family most subject to?

"11. Are you aware of any reason why an insurance might not with safety be effected on his life?"

A man and woman about to marry, have, in this country, on an average, the health and happiness of five human beings depending on their attention to considerations essentially the same as the foregoing; and yet how much less scrupulous are they than the mere dealers in money! "Before the parties," says Dr Caldwell, "form a compact fraught with consequences so infinitely weighty, let the constitution and education of both be matured. They will then not only transmit to their offspring a better organization, but be themselves, from the knowledge and experience they have attained, better prepared to improve it by cultivation. For I shall endeavour to make it appear that cultivation can improve it. When a skilful agriculturist wishes to amend his breed of cattle, he does not employ, for that purpose, immature animals. On the contrary, he carefully prevents their intercourse. Experience moreover teaches him not to expect fruit of the best quality from immature fruit-trees or vines. The product of such crudeness is always defective. In like manner, marriages between boarding-school girls and striplings in or just out of college, ought to be prohibited. In such cases, prohibition is a duty, no less to the parties themselves, than to their offspring and society. Marriages of the kind are rarely productive of anything desirable. Mischief

and unhappiness of some sort are their natural fruit. Patriotism, therefore, philanthrophy, and every feeling of kindness to human nature, call for their prevention. Objections resting on ground not altogether dissimilar may be justly urged against young women marrying men far advanced in years. Old men should in no case contract marriages likely to prove fruitful. Age has impaired their constitutional qualities, which descending to their offspring, the practice tends to deteriorate our race. It is rare for the descendants of men far advanced in years to be distinguished for high qualities of either body or mind.

"As respects persons seriously deformed, or in any way constitutionally enfeebled—the rickety and club-footed, for instance, and those with distorted spines, or who are predisposed to insanity, scrofula, pulmonary consumption, gout, or epilepsy—all persons of this description should conscientiously abstain from matrimony. In a special manner, where both the male and female labour under a hereditary taint, they should make it a part of their duty to God and their posterity never to be thus united. Marriage in such individuals cannot be defended on moral ground, much less on that of public usefulness. It is selfish to an extent but little short of crime. Its abandonment or prevention would tend, in a high degree, to the improvement of mankind."*

I am indebted for the following particulars to the medical gentleman already repeatedly quoted, who was induced to communicate them by the perusal of an early edition of the present treatise :—"If your work has no other effect than that of turning attention to the laws which regulate marriage and propagation, it will have done a vast service, for on no point are such grievous errors committed. I often see in my own practice the most lamentable consequences resulting from neglect of these laws. There are certain families which I attend, where the constitutions of both parents are bad, and where, when anything happens to the

* Thoughts on Physical Education, and the True Mode of Improving the Condition of Man, 2d British edition, p. 9; Edin. 1844.

children, it is almost impossible to cure them. An inflamed gland, a common cold, hangs about them for months, and almost defies removal. In other families, where the parents are strong and healthy, the children are easily cured of almost any complaint. I know a gentleman aged fifty, the only survivor of a family of six sons and three daughters, all of whom, with the exception of himself, died young of pulmonary consumption. He is a little man with a narrow chest, and married a lady of a delicate constitution and bad lungs. She is a tall spare woman, with a chest still more deficient than his own. They have had a large family, all of whom die off regularly as they reach manhood and womanhood, in consequence of affections of the lungs. In the year 1833, two sons and a daughter died within a period of ten months. Two still survive, but they are both delicate, and there can be no doubt that when they arrive at maturity they will follow the rest. This is a most striking instance of punishment under the organic laws."

It is pleasing to observe, that, in Wirtemberg, there are two excellent laws, calculated to improve the moral and physical condition of the people, which other states would do well to adopt. First, "It is illegal for any young man to marry before he is twenty-five, or any young woman before she is eighteen; and a young man, at whatever age he wishes to marry, must show to the police and the priest of the commune where he resides, that he is able, and has the prospect, to provide for a wife and family." The second law compels parents to send their children to school, from the age of six to fourteen years.*

There is no moral difficulty in admitting and admiring the wisdom and benevolence of the institution by which *good* qualities are transmitted from parents to children: but it is frequently held as unjust to the latter, that they should inherit parental *deficiencies*, and be made to suffer for sins which they did not commit. With a view to answering this objection, let us, in the first place, suppose the law of

* See APPENDIX, No. VIII.

hereditary descent to be abrogated altogether—that is to say, the natural qualities of each individual of the race to be conferred at birth, without the slightest reference to what his parents had been or done: it is clear that this form of constitution would have excluded the means of improvement of *the race*. The brains of the New Hollanders and other savage tribes are distinguished by great deficiencies in the moral and intellectual organs. Now, if a considerable development of these is indispensable to the comprehension of science and the practice of virtue, it would, on the present supposition, be impossible to raise the New Hollanders, as a people, one step higher in capacity for intelligence and virtue than they now are. We might cultivate each generation up to the limits of its powers, but there the improvement (and a low one it would be) would stop; for, the next generation being produced with brains equally deficient in the moral and intellectual regions, no principle of increasing amelioration would exist. The same remarks are applicable to every tribe of mankind. If we assume modern Europeans as a standard,—then, if the law of hereditary descent were abrogated, every deficiency which at this moment is attributable to imperfect or disproportionate development of brain, would be irremediable by human means, and would continue while the race existed. Each generation might be cultivated till the summit-level of its capacities was attained, but higher than this no succeeding generation could rise. When we contrast with such a prospect the very opposite effects flowing from the law of hereditary transmission of qualities in an increasing ratio, the whole advantages are perceived to be on the side of the latter arrangement. According to this rule, the children of those who have obeyed the organic, the moral, and the intellectual laws, will, when well educated, not only start from the highest level of their parents in acquired knowledge, but inherit an enlarged development of the moral and intellectual organs, and thus enjoy an increasing capability of discovering and obeying the institutions of the Creator.

It is a remarkable fact that whole tribes of mankind attain to a certain point of civilisation, beyond which, so far as history records, they do not appear spontaneously to advance. Some aboriginal American tribes apparently continued savage for thousands of years, while others stopped short at a low grade of cultivation. Chinese and Hindoo civilisation seems to have been long stationary. The brains of all those races show some palpable deficiencies in the moral or intellectual organs, or in both, or in general size, when compared with the Teutonic brain, which, in Europe, has made the greatest advances in science, morals, and religion. One would almost suspect that the development of the brain sets a limit to the spontaneous development of civilisation in different races.

Mr Timothy Flint, a Presbyterian clergyman, who passed ten years, commencing in 1815, in wanderings and preaching in the valley of the Mississippi, says of the Indians among whom he lived, that "they have not the same acute and tender sensibilities with the other races of men. They seem callous to every passion but rage. . . . Their impassable fortitude and endurance of suffering, which have been so much vaunted, are, after all, in my mind, the result of a greater degree of physical insensibility. . . . No ordinary stimulus excites them to action. None of the common excitements, endearments, or motives, operate upon them at all. They seem to hold most of the things that move us in proud disdain. The horrors of their warfare,—the infernal rage of their battles,—the demoniac fury of gratified revenge,—the alternations of hope and despair in their gambling, to which they are addicted far beyond the whites,—the brutal exhilaration of drunkenness,—these are their excitements." He concludes: "It strikes me that Christianity is the religion of civilised man; that the savages must first be civilised; and that, as there is little hope that the present generation of Indians can be civilised, there is but little more that they will be Christianised."

The reader will find, in the phrenological collections, specimens of the skulls of these savages; and on comparing

them with those of Europeans, he will observe that, in the American Indians, the organs of reflecting intellect, and of the moral feelings, are inferior in size to the same organs in the Europeans. The moral and intellectual organs are decidedly larger in the Sandwich Islanders than in these Indians, and they have received European civilisation with greater cordiality and success. If, by conforming to the organic laws, the moral and intellectual organs of the American savages could be considerably enlarged, they would *desire* civilisation, and would adopt it when offered. If these views are well founded, the brain's susceptibility of improvement by training and education is a point of vital importance towards the progress of the race. In youth, the brain, like the other organs of the body, is more susceptible of modification than in later life; and hence the greater effects of education on the young. Improvement will no doubt have its limits; but it may probably extend to that point at which Man will be capable of placing himself in harmony with the natural laws. The effort necessary to *maintain* himself there will still provide for the activity of his faculties.

2*dly*, We may suppose the law of hereditary descent to be limited to the transmission of good qualities, and abrogated as to the transmission of bad ones; and it may be thought that such an arrangement would be more benevolent and just. But to this view there are objections, which do not occur to the mind without reflection. We see that a vicious and debased parent is actually defective in the moral and intellectual organs. Now, if his children should inherit exactly the same development as himself, this would be the transmission of imperfections, which is the thing objected to; while, if they were to receive a development fixed by Nature, and not at all referrible to that of the parent, this would render the whole race stationary in their first condition, without the possibility of improvement in their capacities. But the bad development may be supposed to transmit, by hereditary descent, a good development. This,

however, would set at nought the supremacy of justice and benevolence; it would render the consequences of contempt for and violation of the Divine laws, and of obedience to them, by the parents, in this particular, precisely alike. The debauchee, the cheat, the murderer, and the robber, would be able to look on the prospects of their posterity with the same confidence in their welfare and happiness as the pious intelligent Christian, who had continually sought to know God and to obey his institutions. Certainly no one in whom the higher sentiments prevail, will for a moment regard this imagined change as any improvement on the Creator's arrangements. What a host of motives to moral and religious conduct would at once be withdrawn, were such a spectacle of Divine goverment to be exhibited to the world!

3*dly*, It may be supposed that human happiness would have been more completely secured, by endowing all men at birth with that degree of development of the moral and intellectual organs which would have best fitted them for discovering and obeying the Creator's laws, and by preventing all aberrations from this standard; just as the lower animals appear to have received instincts and capacities adjusted with perfect wisdom to their conditions. Two remarks occur on this supposition. *First*, We are not competent at present to judge correctly how far the development actually bestowed on the human race is, or is not, wisely adapted to their circumstances; for possibly there are, in the great system of human society, departments exactly suited to all existing forms of brain not imperfect through disease, though our present knowledge may be insufficient for their discovery. The want of a natural index to the mental dispositions and capacities of individuals, and of a true theory of the constitution of society, may have hitherto precluded philosophers from arriving at sound conclusions on this question. It appears to me probable, that, while there is great room for improvement in the talents and dispositions of vast numbers of individuals, the imperfections of the race may not be so

great as we, in our present state of ignorance of the aptitudes of particular persons for particular situations, are prone to believe. But, *secondly*, On the principle that activity of the faculties is the fountain of enjoyment, it may be questioned whether additional motives to the exercise of the whole faculties in harmony with the moral and intellectual powers, and consequently greater happiness, are not conferred by leaving men (within certain limits) to regulate the talents and tendencies of their descendants, than by endowing each individual with the best qualities, independently of the conduct of his parents.

On the whole, there seems reason to conclude that the actual institution, by which both good and bad qualities* are transmitted, is fraught with higher advantages to the race, than the abrogation of the law of transmission altogether, or than the supposed change of it, by which bad men should transmit good qualities to their children. The actual law, when tested by the moral sentiments and intellect, appears, both in its principles and in its consequences, beneficial and expedient. When an individual sufferer, therefore, complains of its operation, he regards it through the medium of his lower faculties alone; his self-love is annoyed, and he carries his thoughts no further. He never stretches his mind forward to the consequences which would ensue to mankind, if the law which grieves him were reversed. The animal faculties, when acting by themselves, regard nothing beyond their own immediate interest, and do not discern even *it* correctly; for no arrangement that is beneficial for the race would be found injurious to individuals, if its influence in regard to them were distinctly traced. The abro-

* In using the popular expressions "good qualities" and "bad qualities," I do not mean to insinuate that any of the tendencies bestowed on Man are essentially bad in themselves. Destructiveness and acquisitiveness, for example, are essential to human welfare in this world, and, when properly directed, produce effects unquestionably good; but they become the sources of evil when they are ill directed, which may happen either from moral deficiency, from intellectual ignorance, or from their organs being too large in proportion to those of the superior sentiments and intellect.

gation, therefore, of the rule under which they complain, would, we may presume, bring greater evils, even upon themselves, than its continuance.

On the other hand, an individual sufferer under hereditary pain, in whom the moral and intellectual faculties predominate, and who believes in the principle and consequences of the institution of hereditary descent as now explained, will not murmur at them as unjust: he will bow with submission to a law which he perceives to be fraught with blessings to the race when it is known and obeyed; and the very practice of this reverential acquiescence will diminish, in a great degree, the severity of his misfortune. Besides, he will see the door of mercy standing widely open, and inviting his return: every step which he makes in his own person towards exact obedience, will remove, by so much, the organic evil transmitted through his parents' transgressions; and his posterity will reap the full benefits of his more dutiful observance.

It may be objected to the law of hereditary transmission of organic qualities, that the children of a blind and lame father have frequently sound eyes and limbs. But, in the *first* place, these defects are generally the result of accident or disease, occurring either during pregnancy or posterior to birth; so that, the normal elements of the defective organs being present in the constitution, the imperfections are not transmitted to the progeny. And, *secondly*, Where the defects are congenital or constitutional, it frequently happens that they are transmitted through successive generations. This is sometimes exemplified in blindness, and even in the possession of supernumerary fingers or toes. One reason why such peculiarities are not transmitted to all the offspring, probably is, that, in general, only one parent is defective. If, when the father, for instance, is blind or deaf, the mother is free from that imperfection, her influence may extend to, and modify the result in, those of her progeny who take their constitutions chiefly from her.

If the mental qualities transmitted to offspring be to some

extent dependent on the organs most highly excited in the parents, this will account for the varieties, along with the general resemblance, that occur in children of the same marriage. It will throw some light also on the circumstance that genius is sometimes transmitted and sometimes not. Unless *both* parents have the cerebral development and temperament of genius, the organic law may not transmit these qualities to the children; and even although both did possess such endowments, they would be transmitted only on condition of the parents obeying that law. It forbids the excessive exertion of the mental and corporeal functions, which exhausts and debilitates the system—an error almost universally committed by persons endowed with high original talent, under the present condition of ignorance of the natural laws, and erroneous fashions and institutions of society. The supposed law would be disproved by cases of weak, imbecile, and vicious children, born of parents whose own stocks, constitutions, and habits, had been in the highest accordance with the organic, moral, and intellectual laws; but no such cases have hitherto come under my observation.

As rules are best taught by examples, I shall now mention some facts that have fallen under my own notice, or have been communicated to me from authentic sources, illustrative of the practical consequences of infringing the law of hereditary descent.

A man, aged about fifty, possessed a brain in which the animal, moral, and knowing intellectual organs, were all large, but the reflecting small. He was pious, but destitute of education; he married an unhealthy young woman, deficient in moral development, but of considerable force of character; and several children were born. The father and mother were far from being happy; and when the children attained to eighteen or twenty years of age, they became adepts in every species of immorality and profligacy: they picked their father's pocket, stole his goods, and had them sold back to him by accomplices, for money, which was spent

in betting, cock-fighting, drinking, and low debauchery. The father was greatly grieved; but knowing only two resources, he beat the children severely as long as he was able, and prayed for them: his own words were, that "if, *after that*, it pleased the Lord to make vessels of wrath of them, the Lord's will must just be done." I mention this last observation, not in jest, but in great seriousness. It was impossible not to pity the unhappy father: yet, who that sees the institutions of the Creator to be in themselves wise, and in this instance to have been directly violated, will not acknowledge that the bitter pangs of the poor old man were the consequences of his own ignorance, and that it was an erroneous view of the Divine administration which led him to overlook his own mistakes, and to attribute to the Almighty the purpose of making vessels of wrath of his children, as the only explanation which he could give of their wicked dispositions? Who that sees the cause of his misery can fail to lament that his piety was not enlightened by philosophy, and directed to observance, in the first instance, of the organic laws of the Creator, as one of the prescribed conditions without performing which he had no title to expect a blessing on his offspring?

In another instance, a man in whom the animal organs, particularly those of combativeness and destructiveness, were very large, but who had a pretty fair moral and intellectual development, married, against her inclination, a young woman fashionably and showily educated, but with a very decided deficiency of conscientiousness. They soon became unhappy, and even blows were said to have passed between them, although they belonged to the middle rank of life. The mother employed the children to deceive and plunder the father, and latterly spent the pilfered sums in purchasing ardent spirits. The sons inherited the deficient morality of the mother, combined with the ill temper of the father; and before they attained majority, they retaliated so recklessly the blows with which he had visited them in their earlier years, that his death might at any moment have en-

sued. The family fireside became a theatre of war, and the father was glad to have them removed from his house, as the only means by which he could feel even his life in safety from their violence.

In another family, the mother has an excellent development of the moral and intellectual organs, while in the father the animal organs predominate in great excess. She has been the victim of ceaseless misfortune, originating from the misconduct of her husband. Some of the children have inherited the father's brain, and some the mother's; and of the sons whose heads resemble that of the father, several have died through debauchery and profligacy under thirty years of age, whereas those who resemble the mother are alive, and little contaminated even amidst all the disadvantages of evil example.

On the other hand, I am not acquainted with a single instance, in which the moral and intellectual organs predominated in the stocks from which both the father and the mother were descended, and also in themselves, and where the external circumstances of the pair allowed the general activity of these powers,—in which all the children did not partake of a moral and intellectual character, differing slightly indeed in degrees of excellence, but presenting in every child the predominance of the human over the animal faculties.

There are well-known examples of the children of ostensibly religious and moral fathers exhibiting dispositions of a very inferior description; but in all the instances of this sort that I have been able to observe, there has been in one or both parents a large development of the animal organs, which were with difficulty controlled by the moral and intellectual powers. The unfortunate child inherited the large animal development, but with defective moral organs; and thus was inferior to both. The way to satisfy one's self on this point, is to examine the heads of the parents. In such cases, a large base of the brain, which is the region of the animal propensities, will be found in one or both.

Another law of the animal kingdom deserves attention; namely, that by which marriages between blood relations tend to the deterioration of the physical and mental qualities of the offspring. In Spain, kings marry their nieces, and in this country first and second cousins marry without scruple; although every physiologist will declare that this is in opposition to the institutions of Nature.

This law holds also in the vegetable kingdom. "A provision of a very simple kind, is, in some cases, made to prevent the male and female blossoms of the same plant from breeding together, this being found to hurt the breed of vegetables, just as breeding in and in does the breed of animals. It is contrived that the dust shall be shed by the male blossom before the female is ready to be affected by it, so that the impregnation must be performed by the dust of some other plant, and in this way the breed be crossed."*

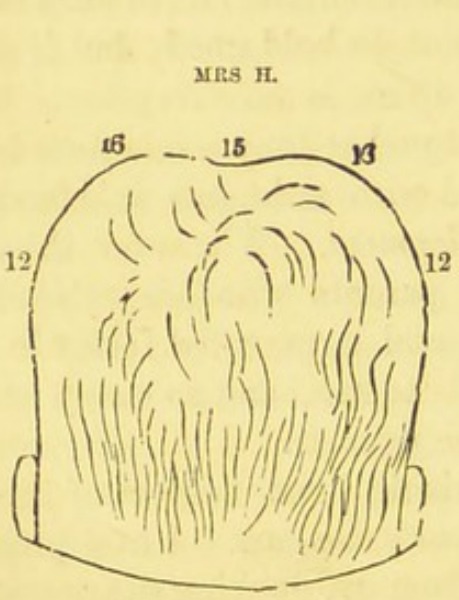
If two near relations, in robust health and possessing very favourably developed brains, unite in marriage, their offspring may not be deteriorated *so much* below the common standard of the country as to attract particular attention, and in such cases the law of nature is supposed not to hold good; but it does operate, for to a law of nature there is no exception. The offspring are doubtless inferior to what they *would have been*, if the same parents had united with strangers in blood, of *equal vigour and cerebral development.* Whenever there is any remarkable deficiency in parents who are related in blood, these appear in marked and aggravated forms in the offspring. This fact is so well known, and so easily ascertained, that I forbear to enlarge upon it.

So much for the miseries arising from neglect of the organic laws in forming the *domestic compact.* I now proceed to advert to those which arise from overlooking the operation of the same laws in the ordinary relations of general society.

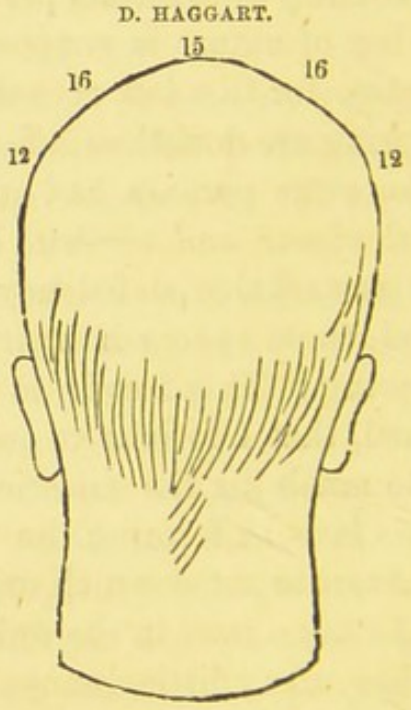
How many little annoyances arise from the misconduct of servants and dependants in various departments of life; how many losses, and sometimes ruin, arise from dishonesty and

* Objects, Advantages, and Pleasures of Science, p. 33.

knavery in confidential clerks, partners, and agents! It is said that depredations are constantly committed in the post-offices of the united kingdom, though every effort is made to select persons of the best character, and the strictest vigilance is exercised over their conduct. If it be true that the talents and dispositions of individuals are influenced and indicated by the development of their brains, and that their conduct is the result of this development and of their external circumstances, including in the latter every moral and intellectual influence coming from without, it is obvious that the evils here enumerated may, to some extent, be obviated by the application of Phrenology. These misfortunes can be traced to the error of having placed men, deficient in moral or intellectual qualities, in situations which demanded these in a higher degree than they possessed them; and any means by which the presence or absence of these qualities can be certainly predicated before their appointment, will go far to prevent the occurrence of the evils alluded to. The two following figures represent several of the organs most im-



15. Firmness small; 16. Conscientiousness large; 12. Cautiousness full.



15. Firmness large; 16. Conscientiousness deficient; 12. Cautiousness rather large.

portant in practical conduct, in opposite states of development, and the dispositions of the individuals exactly corresponded with them.

Mrs H. was a lady remarkable for conscientiousness, but unsteady of purpose. It was necessary for her to have a friend, whose advice she constantly asked and followed, in order to preserve herself from yielding to every internal impulse or outward solicitation.

David Haggart was a dexterous and enterprising thief and pickpocket, and was at last executed for murdering the jailor of Dumfries, in attempting to escape from justice.

If persons having brains resembling that of Haggart, who was remarkable for dishonesty, are placed in situations of trust, presenting temptations to deception and embezzlement which can be resisted only by strong sentiments of justice, their misconduct sooner or later is almost certain, owing to the great size of their animal organs, and the deficiency of their organs of conscientiousness. I have seen so many instances of dishonest practices in conjunction with such forms of brain, that I cannot doubt of the influence of the organisation. Where external circumstances remove from persons thus constituted all temptation to pilfering, their deficient perceptions of justice will still be discernible in the laxness of their notions of morality, in their treatment of inferiors, and in their general conduct.

Again, if a person were wanted for any situation in which great decision of character, steadiness, and perseverance were necessary, and if one were chosen whose organ of firmness resembled that of Mrs H., assuredly his employers would be disappointed. This lady, as already mentioned, was remarkable for vacillation of purpose; and I have never seen a single instance of decision of character combined with such a defect of brain as is here represented. These cases are introduced merely as examples and illustrations. The reader who wishes to pursue the subject further, is referred to the treatises on Phrenology and to the *Phrenological Journal* for additional information.

If any man were to go to sea in a boat of pasteboard, which the water would dissolve, nobody would be surprised at his being drowned; and, in like manner, if the Creator has so constituted the brain as to exert a great influence over the mental dispositions, and if, nevertheless, men are pleased to treat this fact with neglect and contempt, and to place individuals naturally deficient in the moral organs in situations where strong moral powers are required, they have no cause to be surprised if they suffer the natural consequences of their own misconduct, in being plundered and defrauded.

Although I can state, from experience, that it is possible, by the aid of Phrenology, to select persons whose moral qualities may be relied on, yet the extremely limited extent of our practical knowledge in regard to the intellectual talents that fit men for particular duties, must be confessed. To be able to judge accurately what combination of natural talents and dispositions in an individual will best fit him for any given employment, we must have seen a variety of combinations tried in particular departments, and observed their effects. It is impossible, at least for me, to predict with certainty, in new cases, what these effects will be: but I have ever found nature constant; and after once discovering, by experience, a combination of qualities suited to a particular duty, I have never found subsequently an exception to the rule. Cases in which the predominance of particular regions of the brain, such as the moral and intellectual, is very decided, present fewest difficulties; although, even in them, the very deficiency of animal organs may sometimes incapacitate for important employments. Where the three classes of organs, the animal, moral, and intellectual, are nearly *in æquilibrio*, the most opposite results may ensue from different external circumstances exciting the one or the other class to decided predominance in activity; and little reliance should be placed on individuals thus constituted, except when temptations are removed, and strong motives to virtue presented.

Several companies "for guaranteeing the fidelity of per-

sons employed by others," on payment of annual premiums by the persons employed, were instituted a few years ago, and are now in active operation. They proceed on the principle that there is an average extent of dishonesty, as there is of sickness and death, among a large number of persons, and that a certain annual contribution from each, calculated according to this average, will make up the yearly loss arising from individual delinquencies. Such companies, conducted on phrenological principles, could scarcely fail of success; for by means of Phrenology they could ascertain pretty correctly the extent of their risks. The best-developed brains would be safe from dishonesty in all circumstances exclusive of disease; the worst would be secure in no circumstances in which temptation was possible; while those in whom all the three regions of the brain were *in æquilibrio*, would stand or fall according to their external inducements to virtue or vice. If they do not avail themselves of Phrenology, they will be liable to be plundered by knaves. A combination of rogues may hire one of their own number as a confidential clerk, obtain a guarantee for a large sum, send him off to the Continent or America, pretend that he has robbed them, and compel the company to pay the alleged loss. Phrenology would afford them pretty nearly a complete protection against such dishonesty.* These companies, however, do not, I believe, use Phrenology, but rely on a rigid scrutiny of character before undertaking a risk. This is preferring a less to a more certain test. Both should be resorted to. The companies avoid *great* losses from conspiracy or other means, by limiting their risks to moderate sums.

Having now adverted to calamities occasioned by external violence,—to bad health,—to unhappiness in the domestic circle, arising from ill-advised unions and viciously-disposed

* See Testimonials presented by Sir George S. Mackenzie to Lord Glenelg, printed in the Appendix to the Author's System of Phrenology; also a paper by the Author, in the Phrenological Journal, vol. xiv. p. 297, "On the Application of Phrenology to the purposes of the Guarantee Society, &c."

children,—and to the evils suffered from placing persons, as servants, clerks, partners, or public instructors, in situations for which they are not suited by their natural qualities,—and having traced all those evils to infringements or neglect of the physical or organic laws, I proceed to consider the last, and what is reckoned the greatest, of all calamities—

DEATH.

In the introductory chapter a brief account was given of the changes which occurred in the globe before Man was introduced to inhabit it. The facts there referred to show that death, or destruction of vegetable and animal life, was an institution of nature before Man existed; and, by those who are acquainted with them, they are now universally accepted as conclusive.*

Physiologists in general regard the organic frame of Man also, as containing within itself the seeds of dissolution. "The last character by which the living body is distinguished," says a popular author, "is that of terminating its existence by the process of death. The vital energies by which the circle of actions and reactions necessary to life is sustained, at length decline, and finally become exhausted. Inorganic bodies preserve their existence unalterably and for ever, unless some mechanical force, or some chemical agent, separate their particles or alter their composition. But, in every living body, its vital motions inevitably cease, sooner or later, from the operation of causes that are internal and inherent. Thus, to terminate its existence by death, is as distinctive of a living being as to derive its origin from a pre-existing germ."†

It is beyond the compass of science to explain *why* the world was constituted in the manner here represented. I therefore make no inquiry why death was instituted; and I refer, of course, only to the dissolution of organised bodies.

Let us first view the dissolution of the body abstractedly from personal considerations, as a mere natural arrangement.

* See, for instance, Hugh Miller's Testimony of the Rocks.

† Library of Useful Knowledge; Animal Physiology, p. 7.

Death appears to be a result of the constitution of all organised beings; for the very definition of the genus is, that the individuals grow, attain maturity, decay, and die. The human imagination cannot conceive how the former part of this series of movements could permanently exist without the latter, as long as space is necessary to corporeal existence, and is limited. If all the vegetable and animal productions of nature, from the creation downwards, had grown, attained maturity, and there remained, the world would not have been capable of containing the thousandth part of them. On this earth, therefore, decaying and dying appear necessary, to admit of reproduction and growth. Theologians adduce the translation of living human beings to some other portion of space, as an alternative which would have admitted of a constant succession of young; but science contains no evidence of such an institution, and no data to enable us to judge of its effects. It therefore lies beyond the scope of the present treatise.

Viewed abstractedly, then, organised beings live as long as health and vigour continue: but they are subjected to a process of decay, which gradually impairs all their functions, and at last terminates their corporeal existence. In the vegetable world, the effect of this law is, to surround us with young trees, instead of everlasting stately full-grown forests, standing forth in awful majesty, without variation in leaf or bough;—to delight us with the vernal bloom of spring, gracefully giving place to the vigour of summer and the maturity of autumn;—to present for our admiration the rose, first simply and delicately budding, then luxuriant and lovely in its perfect evolution. In short, when we advert to the law of death, as instituted in the vegetable kingdom, and as related to our own faculties of ideality and wonder, which desire the beautiful and the new, and delight in the very changes which death introduces, we without hesitation exclaim that all is wisely and wonderfully made. Turning again to the animal kingdom, we discover that the same fundamental principle prevails. Death removes the old and

decayed, and the organic law introduces in their place the young, the gay, and the vigorous, to tread the stage of life with fresh agility and delight.

This succession in existence may readily be granted to be beneficial to the young, but at first sight it appears the opposite of benevolent to the old. To have lived at all, is felt as giving a right to continue to live; and the question arises, How can the institution of death, as the result of the organic law, be here reconciled with benevolence and justice?

I am aware that, theologically, death is regarded as the punishment of sin, and that the attempt to reconcile our minds to it by reason is objected to, as at once futile and dangerous. But I beg leave to observe, that death prevails among the lower animals, not only by natural decay and the operation of physical forces, but by the express institution of carnivorous creatures destined to prey on living beings; that Man himself is omnivorous, and obviously framed by the Creator for a scene of death; that the inherent qualities of his organic constitution imply death as its termination; and that if these facts be admitted on the one hand, and we are prohibited, on the other, from attempting to discover, from the records of creation itself, the wise adaptation of the human feelings and intellect to this state of things, neither the cause of religion nor that of reason can be benefited. Facts cannot be refuted or concealed; and the only effect of excluding the investigation on which I propose to enter, would be to close the path of reason, and to leave the constitution of the external world and of the human mind apparently in a state of contradiction to each other.

In treating of the moral sentiments, I pointed out that the grand distinction between them and the propensities consists in this—that the former are in their nature disinterested, generous, and fond of the general good, while the latter aim only at the welfare or gratification of the individual. It is obvious, then, that death, as an institution of the Creator, must affect these two classes of faculties in a different manner. A being endowed only with propen-

sities and intellect, and enabled, by the latter, to discover death and its consequences, would probably regard it as an appalling visitation. He would see in it the utter extinction of enjoyment to himself; and although he perceived existence conferred on other beings, who would enjoy life after his removal from the scene, this would afford him no consolation, because he is supposed to be destitute of all the faculties which derive pleasure from disinterestedly contemplating the enjoyments of other creatures. The lower animals, then, whose whole being is composed of the inferior propensities and several *knowing* faculties, would probably see death in this light, if they could have any notion of it at all. It would appear to them as the extinguisher of every pleasure which they had ever felt; and the bare prospect of it might render their lives unhappy. But by depriving them of *reflective* faculties, the Creator has kindly and effectually withdrawn them from this evil. There is not the least reason to believe, that any one of the lower animals, while in health and vigour, has the slightest conception that it is a mortal creature. It lives in as full enjoyment of the present, as if it were assured of every agreeable sensation being eternal. Death takes the individual by surprise, whether it comes in the form of violence suppressing life in youth, or of slow decay in age; and really operates as the removal of one living being to make room for another, without knowledge of the loss in the one which dies.

Let us, however, trace the operation of death, in regard to the lower animals, a little more in detail.

Science, as already remarked, cannot explain why death was instituted at first; but, according to the views maintained in this work, we should expect to find it connected with, and regulated by, benevolence and justice; that is to say, that it should not be inflicted for the sole purpose of extinguishing the life of individuals, to their damage, without any other result—but that the general system under which it takes place should be, on the whole, favourable to the enjoyment, not only of the race, but of each individual animal

while life continues. And this accordingly is the fact. Violent death, and the devouring of one animal by another, are not purely benevolent; because pure benevolence would never inflict pain: but they are instances of destruction leading to beneficial results; that is, wherever death is introduced under the institutions of Nature, it has been preceded by enjoyment arising out of it, to the very animals which are to become the subjects of it. The world is calculated to support only a limited number of living creatures: nevertheless the lower animals have received from Nature powers of reproduction far beyond what are necessary to supply the waste of mere natural decay. Further, they do not possess intellect sufficient to induce them to restrain their numbers within the limits of their means of subsistence. But Nature accomplishes this end by other means.

The natural history of the insect tribes affords striking examples of a pre-arranged system in which a prolific power of production is kept within bounds by an adapted power of destruction. By means of the two, the balance of life among the different tribes, although it admits of oscillations, is held in substantial equipoise. One tribe is appointed to prey on another, which again, when it multiplies beyond its due limits, is devoured by a third; and thus the due proportion of all is maintained. The same principle prevails in the vegetable kingdom. Nature, throughout her whole domain, employs destructiveness as an agent to regulate the quantity of life; but it is always subordinate to benevolence. The greatest extent of life and enjoyment for the whole is the result accomplished.

Herbivorous animals, also, are exceedingly prolific, and yet the supply of vegetable food is limited. Hence, after multiplication for a few years, extensive starvation, the most painful and lingering of all deaths, and the most detrimental to the race, would inevitably ensue: but carnivorous animals have been instituted, who kill and eat them; and by this means, not only do carnivorous animals reap the pleasures of life, but the numbers of the herbivorous are restrained

within such limits that the individuals among them enjoy existence while they live.

St Pierre states this argument forcibly. "By their production without restraint," says he, "animals would be multiplied beyond all limits, till even the globe itself could not contain them. The preservation of every individual produced, would lead to ultimate destruction of the species. Some will answer, that the animals might live always, if they observed a proportion suitable to the territory which they inhabited. But, according to this supposition, they must at last cease to multiply; and then adieu to the loves and alliances, the building of nests, and all the harmonies which reign in their nature."*

The destroyers, again, are limited in their turn; the moment they become too numerous, and carry their devastations too far, their food fails them, and they die of starvation, or, in their conflicts for the supplies that remain, destroy each other. Nature seems averse to inflict death extensively by starvation, probably because it impairs the constitution long before it extinguishes life, and has the tendency to produce degeneracy in the race. It may be remarked also, speculatively, that herbivorous animals must have existed in considerable numbers before the carnivorous began to exercise their functions; for many of the former must die, that one of the latter may live. If a single sheep and a single tiger had been placed together at first, the tiger would have eaten up the sheep at a few meals, and afterwards have died of starvation.

There is reason to believe, that in the state of nature death is attended with little suffering to the brutes. In natural decay, the organs are worn out by mere age, and the animal sinks into gradual insensibility, unconscious that dissolution awaits it. Further, the wolf, the tiger, the lion, and other beasts of prey, instituted by the Creator as instruments of violent death, are provided, in addition to destructiveness, with large organs of cautiousness and secretiveness, which

* Etude de la Nature, p. 17; Paris, 1791.

prompt them to steal upon their victims with the suddenness of a mandate of annihilation; and they seem to be also impelled to inflict death in the quickest and least painful method. The tiger and lion spring from their covers with the rapidity of the thunderbolt, and one blow of their tremendous paws, inflicted at the junction of the head with the neck, produces instant death. The eagle strikes its sharp beak into the spine of the birds which it devours, and their agony endures scarcely for an instant. It has been objected, that the cat plays with the unhappy mouse, and prolongs its tortures: but the cat that does so is the pampered and well-fed inhabitant of a kitchen; the cat of nature is too eager to devour, to indulge in such luxurious gratifications of destructiveness and secretiveness. It kills in a moment, and eats.

Here, then, is a regularly organised process for withdrawing individuals among the lower animals from existence, almost by a fiat of destruction, which permits the comfortable subsistence of the creatures while they live, and makes way for a succession of new occupants.* "Nature," says St Pierre, "does nothing in vain; she intends few animals to die of old age; and I believe that she has permitted to none except Man to run the entire course of life, because in his case alone can old age be useful to the race. What would be the advantage of old animals, incapable of reflection, to a posterity born with instincts holding the place of experience; and how, on the other hand, would decrepit parents find support among offspring which instinctively leave them whenever they are able to swim, to fly, or to run? Old age would prove to such creatures a burden; of which beasts of prey mercifully deliver them."

* Mr H. C. Watson disputes the views stated in the text, and maintains that "innumerable creatures, after being crushed, lacerated, or otherwise injured by stronger animals, are left to a lingering death by starvation, or other slowly completed consequences of the injuries which they have received. . . . The butcher-bird impales living insects upon thorns, and leaves them to die."—*Phren. Jour.*, vol. xiii. p. 364. The reader must decide which of these views best accords with the general system of nature.

Man, in his mode of putting the lower creatures to death, is not so tender as beasts of prey: but he might be so. If the sheep were guillotined, and not maltreated before its execution, it would not suffer from the process. And, by the law which I have explained, Man does not with impunity add one unnecessary pang to the death of the inferior animals. In the butcher who inflicts torments on calves, sheep, and cattle, while driving them to the slaughter, —and who bleeds them to death by successive stages, prolonged for days, to whiten their flesh,—the animal faculties of destructiveness, acquisitiveness, and self-esteem, predominate so decidedly in activity over the moral powers, that he is necessarily excluded from the enjoyments attendant on the supremacy of the human faculties: he, besides, goes into society under the influence of the same low combination, and suffers animal retaliation at every hand; so that he does not escape with impunity for his outrages against the moral law.

Here, then, we perceive nothing malevolent in the institution of death, in so far as regards the lower animals. A pang certainly does attend it; but benevolence is equally perceptible in the general results of the system of which it forms a part.

No remedial process is instituted by Nature to repair injuries sustained by purely physical objects. If a mirror fall and be smashed, it continues ever after in fragments; if a ship sink, it remains at the bottom of the ocean. Under the organic law, on the other hand, a distinct remedial process is established. If a tree be blown down, every root that remains in the ground will take on increased activity to preserve its life; if a branch be lopped off, new branches will shoot out in its place; if a leg in an animal be broken, the bone will reunite; if a muscle be severed, it will grow together; if an artery be obliterated, the neighbouring arteries will enlarge their dimensions, and perform its duty. The Creator, however, not to encourage animals to abuse this benevolent institution, has established pain as an attendant on infringement of the organic law, and made them suffer from the

violation of it, even while He restores them to health. It is under this law that death has received its pangs. Instant death is not attended with pain of any perceptible duration; and it is only when a lingering death occurs in youth and middle age, that the suffering is severe. Dissolution, however, does not occur at these periods *as a direct and intentional result of the organic laws*, but as the consequence of infringement of them. Under the fair and legitimate operation of these laws, the individual whose constitution was at first sound, and whose life has been in accordance with their dictates, will live till old age fairly wears out his organism, and then the pang of expiration is little perceptible.*

This view of our constitution is objected to by some, because disease appears to them to invade our bodies, and after a time either to end in death or to disappear, without any organic cause being discoverable. On this subject I would observe, that there is a vast difference between the

* The following table is copied from an interesting article by Mr William Fraser, on the History and Constitution of Benefit or Friendly Societies, published in the Edinburgh New Philosophical Journal for October 1827, and is deduced from Returns by Friendly Societies in Scotland for various years, from 1750 to 1821. It shows how much sickness increases with age, and how little there is of it in youth, even in the present disordered state of human conduct. We may expect the quantity to decrease, at all ages, in proportion to the increase of obedience to the organic laws. It is chiefly in advanced life, when the constitution has lost a portion of its vigour, that the accumulated effects of disobedience become apparent.

Average Annual Sickness of each Individual.

Age.	Weeks and Decimals.	Weeks.	Days.	Hours.	Proportion of Sick Members.
Under 20	0·3797	0	2	16	1 in 136·95
20-30	0·5916	0	4	3	1 ... 87·89
30-40	0·6865	0	4	19	1 ... 75·74
40-50	1·0273	1	0	4	1 ... 50.61
50-60	1·8806	1	6	3	1 ... 27·65
60-70	5·6337	5	4	10	1 ... 9·23
Above 70	16·5417	16	3	19	1 ... 3·14

Statistics collected from a larger field have more recently been published by Mr Neison. They are referred to in M'Culloch's De-

uncertain and the unascertained. It is now generally admitted that all the movements of matter are regulated by laws, and that the motions are never uncertain, although the laws in virtue of which they occur may, in some instances, be unascertained. The revolutions of the planets, for example, are fully understood, while those of some of the comets are as yet unknown; but no philosopher imagines that the latter are uncertain. The minutest drop of water that descends the mighty Fall of Niagara is regulated in all its movements by definite laws—whether it rise in mist, and float in the atmosphere to distant regions, there to descend as rain; or be absorbed by a neighbouring shrub, and reappear as an atom in a blossom adorning the Canadian shore; or be drunk up by a living creature, and sent into the wonderful circuit of its blood; or become a portion of an oak, which, at a future time, shall career over the ocean as a ship. Nothing can be less ascertained, or probably less ascertainable by mortal study, than the motions of such an atom; but every philosopher will, without a moment's hesitation, concede that not one of them is uncertain.* A philosophic understanding will extend the same conviction to the

scriptive and Statistical Account of the British Empire, 32d. edition, vol. ii. pp. 581–2, where the following table is given :—

Comparative View of the Sick Time in Mr Neison's and other Returns.

Ages.	Average Number constantly Sick to 100 living at each age.				
	Friendly Societies.				East India Company's Labourers.
	Scotland. (Highland Society.)	England. (Ansell.)	Scotland. (Neison.)	England. (Neison.)	
20–30	1·14	1·54	1·65	1·69	1·62
30–40	1·32	1·83	1·66	1·91	2·06
40–50	1·97	2·56	2·44	2·89	2·69
50–60	3·60	4·32	5·17	5·21	6·58

* I owe this forcible illustration to Dr Chalmers, having heard it in one of his lectures.

phenomena in every department of nature. In many instances our knowledge may be so imperfect, that we are incapable of pointing out the chain of connection betwen a disease and its organic cause; but he is no philosopher who doubts the *reality* of the connection.

One reason of the obscurity that prevails on this subject in the minds of persons not medically educated, is ignorance of the structure and functions of the body; and another is, that diseases appear under two very distinct forms—structural and functional—only the first of which is understood, by common observers, to constitute a proper organic malady. If an arrow is shot into the eye, derangement of the structure is evident, and the most determined opponent of the natural laws will at once admit the connection between the blindness which ensues, and the lesion of the organ. But if a watch-maker or an optical-instrument-maker, by long-continued and excessive exertion of the eye, becomes blind, the disease is called functional; the function, from its organ being overwrought, cannot be successfully executed, but frequently no alteration of structure can be perceived. The philosophic physiologist, however, doubts not that there *is* a change of structure, corresponding to the functional derangement, although human observation cannot detect it. He never says that it is nonsense to assert that the patient has become blind in consequence of infringement of the organic laws. It is one of these laws that the eyes shall be exercised moderately, and it is a breach of that law to strain them to excess. The same principle applies to a large number of diseases occurring under the organic laws. Imperfections in the tone, structure, or proportions of certain organs, may exist at birth, so hidden by their situation, or so slight, as not to be readily perceptible, but which are not on that account the less real and important; or deviations may be made gradually and imperceptibly from the proper exercise of the functions; and from one or other cause, disease may invade the constitution. Religious persons term disease arising from such hidden causes, dispensations of God's pro-

vidence; the careless name them unaccountable events: but the enlightened physician views them as the results of imperfect or excessive action of the organs; and proceeds on the conviction that they have been caused by deviations from the laws which regulate the animal economy. The objection that the doctrine of the organic laws is unsound, because diseases come and go without uneducated persons being able to trace their causes, has not a shadow of reason to support it. I may err in my exposition of these laws; but I hope that I do not err in stating that neither disease nor death, in early and middle life, can take place under the ordinary administration of Providence, except when the organic laws have been infringed.

The pains of premature death, then, are the pre-ordained consequences of infringement of these laws; and the object of subjecting us to them probably is, to inculcate on us the necessity of obeying the laws that we may live, and to prevent our abusing that capacity of remedial action which is inherent to a certain extent in our constitution.

Let us now view death as an institution appointed to Man. If the constitution of Man, when sound in its elements, and preserved in accordance with the organic laws, is calculated to endure in health from infancy to old age; and if death, when it occurs during the early or middle periods of life, is the consequence of departure from these laws; it follows that even in premature death a benevolent principle is discernible. Although the capacity of remedial action allows animals to recover from moderate injuries, yet the very nature of the organic laws must place a limit to it. If, after the brain had been blown to atoms by a bombshell, life could be preserved, and health be restored, as effectually as a broken leg and a cut finger can be healed, this would be an abrogation of the organic laws, and of all the curbs which they impose on the lower propensities: every incitement which they afford to the activity of the higher sentiments and intellect would be lost. The extent of the remedial capacity of nature, however, in youth and middle life, is much greater than is

generally believed. The inherent tendency of the organism, at these ages, is towards restoration. There is then a persistency in the processes of life which is truly wonderful; so great indeed, that few patients who enjoy mental fortitude, sound sense, self-control, and the advice of an enlightened physician, need despair. Still there is a limit to it; and the limit is this—that any disobedience, from the effects of which restoration is permitted, must not be excessive in extent, and must not involve, to too great a degree, any organ essential to life, such as the brain, lungs, stomach, or intestines. The maintenance of the law, with all its advantages, requires that restoration from grievous derangements of these organs should not be permitted. When we reflect on the hereditary transmission of qualities to children, we perceive benevolence to the race, in the institution which cuts short the life of an individual in whose person disease of essential organs has exceeded the limits of the remedial process: it prevents the extension of the injurious consequences of his errors over an innumerable posterity. In premature death, then, we see two objects accomplished. *First*, the individual sufferer is withdrawn from agonies which could serve no beneficial end to himself; for, the limits of recovery having been transgressed, continued life would be protracted misery: and, *secondly*, the race is guaranteed against the transmission of his disease to posterity.

The disciple of Mr Owen formerly alluded to,* who had grievously transgressed the organic law, and suffered consequent pain, observed: "Philosophers have urged the institution of death as an argument against Divine goodness; but not one of them could have experienced, for five minutes, the pain which I now endure, without looking on it as a merciful dispensation. I have departed from the natural laws, and suffered the punishment; and I see in death only the Creator's benevolent hand, stretched out to terminate my agonies when they cease to serve any beneficial end." On this principle, the death of a feeble and sickly child is an

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event of mercy to it. It withdraws a being, in whose person the organic laws have been violated, from useless suffering, and also from the possibility of transmitting its imperfections to others.

If, then, pain and disease, as appointed consequences of transgressing the organic laws, are founded in benevolence and wisdom; and if death, in the early and middle periods of life, is an arrangement for withdrawing the transgressor from further suffering, when return to obedience is impossible, and for protecting the race from the consequences of his errors, it also is a wise and benevolent institution.

This leaves only *death in old age* as a natural, and, to Man, unavoidable institution of the Creator. It will not be denied that if old persons, when their powers of enjoyment are fairly exhausted, and their cup of pleasure is full, could be removed from this world, as we have supposed the lower animals to be, in an instant, and without pain or consciousness, to make way for a fresh and vigorous offspring, fitted to run the career which the old have terminated, there would be in the arrangement no lack of benevolence to the race. At present, while we live in ignorance and habitual neglect of the organic laws, death probably comes upon us with more pain and suffering, even in advanced life, than would be its legitimate accompaniment if we placed ourselves in accordance with them; so that we are not now in a condition to ascertain the *natural* amount of pain necessarily attendant on death. Judging from such facts as have been observed, we may infer that the close of a long life, founded at first upon, and afterwards spent in accordance with, the Creator's laws, would not be accompanied with great organic suffering, but that an insensible decay would steal upon the frame.

Be this, however, as it may, I observe, in the next place, that, as the Creator has bestowed on Man animal qualities which fear death, and reason which carries home to him the conviction that he must die, it is an interesting inquiry, whether He has provided any *natural* means of relief from this combination of terrors. "And what thinkest thou,"

said Socrates to Aristodemus, "of this continual love of life, this dread of dissolution, which takes possession of us from the moment that we are conscious of existence?" "I think of it," answered he, "as the means employed by the same great and wise Artist, deliberately determined, to preserve what he has made." Lord Byron strongly expressed the same opinion, and was struck with the energetic efforts which he instinctively made, in a moment of danger, to preserve his life, although in his hours of calm reflection he felt so unhappy that he wished to die. There are reasons for believing not only that the love of life is a special instinct, but that it is connected with a particular organ, situated at the base of the brain; and that, *cæteris paribus*, the feeling varies in intensity in different individuals, according to the size of the organ. I have ascertained from numerous confidential communications, as well as by observation, that even when external circumstances are equally prosperous, there are great differences in the desire of life in different minds. Some persons have assured me that death, viewed even as the extinction of being, and without reference to a future state, did not appear to them in the least appalling, or calculated, when contemplated as their certain fate, to impair the enjoyment of life; and these were not profligate men, whose vices might make them desire annihilation as preferable to future punishment, but persons of pure lives and pious dispositions. This is so different from the feelings experienced by ordinary people, that I have been led to ascribe it to a very small development of the organ of the love of life in these individuals. A medical gentlemen who was attached to the native army in India, informed me, that in many of the Hindoos the love of life is by no means strong. On the contrary, it is frequently necessary to compel them to make even moderate exertions, quite within the compass of their strength, to avoid death. In such persons, that part of the base of the brain which lies between the ear and the anterior lobe, measuring across the head, is generally narrow. Further, if there be an organ for

the love of life, the vivacity of the instinct will diminish in proportion as the organ decays; and age, which induces the certain approach of death, will, by impairing the organ, strip the destroyer, in a corresponding degree, of his terrors. The exceptions to this rule will be found in cases in which the organ, from predominating in size and activity, preserves an ascendency over the others even in decay.

These ideas, however, are thrown out only as probabilities, suggested by the facts before described. Whatever degree of truth they may have, it is certain that the Creator has bestowed moral sentiments on Man, and arranged the theatre of his existence on the principle of their supremacy; and these, when duly cultivated and enlightened, are calculated to save him from the moral terrors of death. For example,

1. It is obvious that, in consequence of the institution of birth, amativeness and philoprogenitiveness are provided with opportunities of gratification. But if the same individuals had lived here for ever, the enjoyments that flow from the sexual union and the rearing of offspring must soon have come to an end, through the sheer want of physical space to contain, and of food to support, a constantly increasing population. The very existence of these propensities shows that the production and rearing of young forms part of the design of creation; and the successive production of young appears necessarily to imply the removal of the old.

2. Had things been otherwise arranged, the other faculties would have been limited in their gratifications. Conceive, for a moment, how much exercise is afforded to our intellectual and moral powers, in acquiring and communicating knowledge to the young, and in providing for their enjoyments; also, what a delightful exercise of the higher sentiments is implied in the intercourse between the aged and the young: all which pleasures would have been unknown had there been no young in existence.

3. Constituted as Man is, the law of a succession of individuals withdraws beings whose physical and mental con-

stitutions have run their course and become impaired in sensibility, and substitutes in their place fresh and vigorous minds and bodies, far better adapted for the enjoyment of the world.

4. If I am right in the position that the organic laws transmit to offspring, in an increasing ratio, the qualities most active in the parents, the law of succession provides for a higher degree of improvement in the race than could have been reached, if a single generation, possessing the present human constitution, had been permanent.

Let us inquire, then, how the moral sentiments are affected by death in old age, as a natural institution.

Benevolence, glowing with a disinterested desire for the increase and diffusion of enjoyment, utters no complaint against death in old age, as a surrender of mortal life by a being impaired in its capacity for usefulness and pleasure, to make way for one fresh and vigorous in all its powers, and fitted to carry to a higher point of improvement every beneficial measure previously begun. Conscientiousness, if thoroughly enlightened, perceives no infringement of justice in the calling on a guest, satiated with enjoyment, to retire from the banquet, so as to permit a stranger with a keener and more youthful appetite to partake; and veneration, when instructed by intellect that this is the institution of the Creator, and made acquainted with its objects, bows in humble acquiescence in the law. Now, if these powers have acquired, in any individual, that complete supremacy which they are clearly intended to hold, and if he have been trained in these views from his infancy, he will be placed by them as much above the terror of death as a natural institution, as the lower animals are by being ignorant of its existence. And unless the case were so, Man would, by the very knowledge of death, be rendered, during his whole life, more miserable than they.

The true view of death, therefore, as a natural institution, is, that it is an essential part of the system of organisation; that birth, growth, and arrival at maturity, as completely

imply decay and death in old age, as morning and noon imply evening and night, as spring and summer imply harvest, or as the source of a river implies its termination. Besides, organised beings are constituted by the Creator to be the food of other organised beings, so that some must die that others may live. Man, for instance, cannot live on stones, on earth, or water, which are not organised, but must feed on vegetable and animal substances; so that death is as much, and as essentially, an inherent attribute of organisation as life itself. If the same animals and men had been destined for a permanent occupation of the earth, we may presume, from analogy, that God,—instead of creating a primitive pair of each, and endowing them with extensive powers of reproduction, with a view to their ushering young beings into existence,—would have furnished the world with a definite complement of living creatures, perfect at first in all their parts and functions, and that these would have remained without diminution and without increase.

To prevent, however, all chance of being misapprehended, I repeat, that I do not at all refer to the state of the soul or mind after death, but merely to the dissolution of organised bodies; that, according to the soundest view which I am able to obtain of the natural law, pain and death during youth and middle age, in the human species, are consequences of departure from the Creator's law,—while death in old age, by insensible decay, is an essential part of the system of organic existence as now constituted; that this arrangement admits of a succession of individuals, substituting the young and vigorous for the feeble and decayed; that it is directly the means by which organised beings live, and indirectly makes way for the gratification of amativeness, philoprogenitiveness, and a variety of other faculties; that it admits of the race ascending in the scale of improvement, both in their organic and in their mental qualities; and finally, that the moral sentiments, when supreme in activity, and enlightened by intellect, which perceives the design and consequences of the arrangement, are calculated to place Man

in harmony with it; while religion disciplines all the faculties to cheerful submission to the will of God, and completes what reason leaves undone.

If the views now unfolded be correct, death in old age will never be abolished as long as Man continues an organised being; but pain and the frequency of premature death will decrease in the exact ratio of his obedience to the physical and organic laws. It is interesting to observe that there is already some evidence of this process being begun. About the middle of last century, tables of the average duration of life in England were compiled for the use of the Life Insurance Companies ; and from them it appears to have been then 28 years—that is, 1000 persons being born, and the years of their respective lives being added together, and divided by 1000, the result was 28 to each. By recent tables, it appears that the average is now greatly higher. A report of the mortality in Edinburgh and Leith for the year 1846 presents the following results :—

The mean age at death of the 1st class, composed of gentry and professional men, was . .	43½ years.
The mean age at death of the 2d class, merchants, master tradesmen, clerks, &c., . . .	36½ years.
The mean age at death of the 3d class, artisans, labourers, servants, &c., . . .	27½ years.

As I interpret this document, it is an intimation that these different classes have fulfilled, in widely different degrees, the *conditions* on which God proffered to continue with them the boon of life. We cannot imagine that He deals partially with men, and establishes one law for the rich and another for the poor: on the contrary, the structure of the various organs of the body on which life depends is similar in all; and the composition of the atmosphere, the rays of light, and the winds of heaven, which affect these organs for good or evil, diffuse their appointed influences without the least respect of persons. To the circumstance, therefore, of obedience or disobedience to the organic laws, must these painfully different consequences be ascribed. Some

persons have said, that the difference arises from errors in compiling the old tables, and that the superior habits of the people are not the cause. There may be errors in the old tables, but it is more probable that increasing knowledge and stricter obedience to the organic laws have diminished the number of premature deaths; and it is only by such a supposition that the different duration of life among the different classes of the population of Edinburgh can be accounted for. That this idea is correct, and that the average duration of life is increasing, is fully proved by the returns of the Registrar-General. Our successors, a century hence, will probably attain an average longevity exceeding 50 years, and may then, on similar grounds, ascribe to errors in our tables the present low average* which we exhibit.†

SECT. III.—CALAMITIES ARISING FROM INFRINGEMENT OF THE MORAL LAW.

We now proceed to consider the Moral Law, which is proclaimed by the whole faculties acting harmoniously; or, in cases of conflict, by the higher sentiments and intellect acting harmoniously, and holding the animal faculties in subjection.

In surveying the moral and religious codes of different nations, and the moral and religious opinions of different philosophers, every reflecting mind must have been struck with their diversity. Phrenology, by demonstrating differences of relative size in the mental organs, accompanied by corresponding differences in the power and activity of the faculties, enables us to account for these varieties of sentiment. A code of morality framed by a legislator in whom the animal organs were large, and the moral organs small,

* A low average longevity depends in great measure on an excessive mortality among children. Infantile life is the most delicate test for proper sanitary arrangements; and it is principally by the deaths among the children that the average duration of life is so much shorter among artisans than among the gentry and professional men. In many rural districts, the average duration of life of all classes already exceeds 50 years.—Ed.

† See Appendix, No. IX.

would be very different from one instituted by another lawgiver, in whom this combination was reversed. In like manner, a system of religion, founded by a man in whom the organs of destructiveness, wonder, and cautiousness were very large, and those of veneration, benevolence, and conscientiousness deficient, would present views of the Supreme Being widely different from those which would be promulgated by one in whom the last three faculties, and intellect, predominated. As nature contains objects related to all the faculties, each individual may find facts and circumstances in harmony with his own combination of faculties, and, by omitting all discrepant truths, he may present a plausible array of authorities from nature for his peculiar opinions. Hence, the particular views of nature, and the particular code of morality and religion, *which are most in harmony with the whole faculties of the individual*, will appear to him to be the best, *while he refers only to the dictates of his* own *mind as the standard of right and wrong.* But if we show that when several faculties conflict, the *scheme of external creation is arranged in harmony with certain faculties in preference to others*, so that enjoyment flows upon the individual from without when his conduct is in conformity with some, and that evil overtakes him when he resigns himself to others, we shall prove that the suggestions of the former class of faculties are the morality and religion established by the Creator, and that individual men, who support codes differing from His, must necessarily be deluded by imperfections in their own minds. That constitution of mind, also, may be pronounced to be the best, which harmonizes most completely with the morality and religion established by the Creator. In this view, *morality becomes a science*, and departures from its dictates may be shown to be practical follies, injurious to the interest and happiness of the individual.

Dugald Stewart has justly remarked, that "the importance of agriculture and of religious toleration to the prosperity of states, the criminal impolicy of thwarting the kind arrangements of Providence by restraints upon com-

merce, and the duty of legislators *to study the laws of the moral world as the groundwork and standard of their own*, appear, to minds unsophisticated by inveterate prejudices, as approaching nearly to the class of axioms;—yet, how much ingenious and refined discussion has been employed, even in our own times, to combat the prejudices which everywhere continue to struggle against them; and how remote does the period yet seem, when there is any probability that these prejudices shall be completely abandoned!"* The great cause of the long continuance of these prejudices, is the want of an intelligible and practical philosophy of morals. Before ordinary minds can perceive that the world is really governed by Divine laws, they must become acquainted with the nature of Man, physical, animal, moral, and intellectual; with the relations of the different parts of that nature to each other; and with the relationship of the whole to God and external objects. The present treatise is an attempt (a very feeble and imperfect one indeed) to arrive, by the aid of Phrenology, at a demonstration of morality as a science. The interests dealt with in the investigation are so elevating, and the effort itself so delightful, that the attempt carries its own reward, however unsuccessful in its results. I am not without hope, that if Phrenology and the doctrine of the natural laws were taught to the people as part of their ordinary education, the removal of these prejudices would be considerably accelerated. This instruction may be postponed; but if the views maintained in this work be sound, it will in time be given to the young.

Assuming, then, that, in cases of conflict among the faculties of the mind, the higher sentiments and intellect hold the natural supremacy, I shall endeavour to show, that obedience to the dictates of these powers is rewarded with pleasing emotions in the mental faculties themselves, and with the most beneficial external consequences; whereas disobedience is followed by deprivation of these emotions, by painful feelings within the mind, and by much external evil.

* Prelim. Dissert. to Ency. Brit., p. 83, 8th ed.

1. Obedience is accompanied by pleasing emotions in the faculties. It is scarcely necessary to dwell on the fact, that every propensity, sentiment, and intellectual faculty, when gratified in harmony with all the rest, is a fountain of pleasure. How many exquisite thrills of joy arise from philoprogenitiveness, adhesiveness, acquisitiveness, constructiveness, love of approbation, and self-esteem, when gratified in accordance with the moral sentiments! Who that has ever poured forth the aspirations of hope, ideality, wonder, and veneration, directed to an object in whom intellect and conscientiousness also rejoiced, has not experienced the deep delight of such an exercise? And who is a stranger to the grateful pleasures attending an active benevolence? Directing our attention to the intellect, what pleasures do we find to be afforded by the scenery of nature, by painting, poetry, and music, to those who possess the combination of faculties suited to these objects! And how rich a feast does philosophy yield to those who possess large organs of the reflecting faculties, combined with concentrativeness and conscientiousness! These exquisite rewards are attached by the Creator to the active exercise of our faculties in accordance with the moral law; and one punishment, clear, obvious, and undeniable, inflicted on those who neglect or infringe that law, is *deprivation* of these pleasures. This is a consideration very little attended to; because men, in general, possess such an imperfect knowledge of the natural moral law, that they have only a very slender experience of its rewards, and do not know the enjoyments they are deprived of by its infringement. Before its full measure can be judged of, the mind must be instructed in its own constitution, in that of external objects, and in the relationship established between it and them, and between it and the Creator. Until a tolerably distinct perception of the truths brought to light by a knowledge of these relationships be obtained, the faculties cannot enjoy repose, nor act in full vigour and harmony. While, for example, our forefathers regarded the marsh-fevers to which they were subject in consequence of deficient drainage

of their fields,—and the outrages on person and property, attendant on the wars waged by the English against the Scots, or by one feudal lord against another on their own soil,—not as the pre-ordained consequences of particular infringements of the organic and moral laws, to be removed by obedience to these laws, but as inscrutable dispensations of God's providence, which it was impossible for them to avert, and which it behoved them, therefore, meekly to endure,—the full enjoyment that the moral and intellectual faculties were fairly calculated to afford could not be experienced. Benevolence would be pained by the sufferings of the victims; veneration would regard God with doubts as to his goodness; and conscientiousness would suggest endless surmises of disorder and injustice in a scheme of creation under which such evils occurred and were left without a remedy:—in short, the full tide of moral, religious, and intellectual enjoyment could not freely flow, until views more in accordance with the constitution and desires of the moral faculties were obtained. The same evil still afflicts mankind to a great extent. How is it possible for the Hindoo, Mussulman, Chinese, and savage American, while they continue to worship deities whose qualities outrage benevolence, veneration, and conscientiousness, and while they remain in profound ignorance of almost all the Creator's natural institutions, in consequence of infringing which they suffer evils without number—how is it possible for such men to form even a conception of the gratifications which the moral and intellectual nature of Man is capable of enjoying, when he is enlightened concerning the Creator's true character, and exercised in harmony with the Divine institutions? This operation of the moral law is not the less real because many persons do not recognise it. Sight is not a less excellent gift to those who see, because some men born blind have no conception of the extent of pleasure and advantage from which the want of it cuts them off.

The attributes of the Creator may be inferred from His works; but it is obvious that, to arrive at the soundest views,

we must know His institutions thoroughly. To a grossly ignorant people, who suffer hourly from transgression of His laws, the character of the Deity will seem more mysterious and severe than to enlightened men, who trace the principles of His government, and who, by observing His laws, avoid the penalties of infringing them. His attributes will appear to human apprehension more and more perfect and exalted, in proportion as His works shall be understood. The low and miserable conceptions of God formed by the vulgar among the Greeks and Romans, were the reflections of their own ignorance of natural, moral, and political science. The discovery and improvement of Phrenology must necessarily have a great effect on natural religion. Before Phrenology was known, the moral and intellectual constitution of Man was unascertained: in consequence, the relations of external nature towards it could not be competently judged of; and, while these were involved in obscurity, many of the ways of Providence must have appeared mysterious and severe, which in themselves were lucid and benevolent. Again, as bodily suffering and mental perplexity would bear a proportion to this ignorance, the character of God would appear to the natural eye, in that condition, much less perfect than it will do after these clouds of darkness shall have passed away.

Some persons, in their great concernment about a future life, are prone to overlook the practical direction of the mind in the present. When we consider the nature and objects of the mental faculties, we perceive that a great number of them have the most obvious and undeniable reference to this life: for example, amativeness, philoprogenitiveness, combativeness, destructiveness, acquisitiveness, secretiveness, cautiousness, self-esteem, and love of approbation, with size, form, colouring, weight, tune, wit, and probably other faculties, stand in such evident relationship to this particular world, with its moral and physical arrangements, that if they are not capable of legitimate application here, it is difficult to assign a reason for their being bestowed on us. We possess also benevolence, veneration, hope,

ideality, wonder, conscientiousness, and reflecting intellect, all of which, while they find scope for gratification in this world, may be adapted also to a higher sphere of existence. But the important consideration is, that here on earth these two sets of faculties are combined; and, on the same principle that led Sir Isaac Newton to infer the combustibility of the diamond, I am disposed to expect that the external world, when its constitution and relations shall be sufficiently understood, will be found to be in harmony with all our faculties,—and that of course the character of the Deity, as unfolded by the works of creation, will rise higher and higher in our estimation, and more and more gratify our moral and intellectual powers, in proportion as knowledge advances. The structure of the eye is admirably adapted to the laws of light, that of the ear to the laws of sound, and that of the muscles to the laws of gravitation; and it would be strange if our moral and intellectual constitution were not as wisely adapted to the general order of the external world.

The principle is universal, and admits of no exception, that want of power and activity in any faculty is accompanied by deprivation of the pleasures attendant on its vivacious exercise. He who is so deficient in the organ of tune that he cannot distinguish melody, is cut off from a source of gratification enjoyed by those who possess that organ in a state of vigour and high cultivation; and the same principle holds good in the case of every other organ and faculty. Criminals and profligates of every description, therefore, from the very constitution of their nature, are excluded from great enjoyments attendant on virtue; and this is the *first* natural punishment to which they are inevitably liable. Persons, also, who are ignorant of the constitution of their own minds, and the relations of them to external objects, not only suffer many direct evils on this account, but, through the consequent inactivity of their faculties, are, besides, deprived of many exalted enjoyments. The works of creation and the character of the Deity are the legitimate objects of contemplation to our highest powers; and he who is blind

to their qualities, loses much of the benefit of his moral and intellectual nature. If there be any one to whom these gratifications are unknown, or appear trivial, either he must, to a considerable degree, be still under the dominion of the animal propensities, or his views of the Creator's character and institutions must be at variance with the natural dictates of the moral sentiments and intellect. The custom of teaching children to regard with high admiration the literature and history of the Greeks and Romans, stained with outrages condemned by the superior faculties of Man, has probably diverted their minds from the study of the Creator and His works, and had a pernicious effect on the views subsequently entertained by them of this world and its capabilities. If the achievements of barbarous men engage that attention which might be more profitably bestowed on the glorious works of God, we need not be surprised that no satisfaction to the moral sentiments is experienced while such a course of education is pursued.

2. But, in the *second* place, as, in cases of conflict among the faculties, the world is arranged on the principle of the supremacy of the moral sentiments and intellect, observance of the moral law is attended with external advantages, and infringement of it with evil consequences; and from this constitution arises the second natural punishment of immoral conduct.

Let us trace the advantages of obedience.—In the domestic circle, if we preserve habitually benevolence, conscientiousness, veneration, and intellect supreme, it is undeniable that we shall rouse the moral and intellectual faculties of children, servants, and assistants, to love us, and to yield us willing obedience and aid. Our commands will be reasonable and mild, and the commerce between us will be that of love. With regard to our equals in society, in what high estimation do we not hold a friend in whom we trace the supremacy of the moral sentiments; what love, confidence, and delight do we not repose in him! To a merchant, physician, lawyer, magistrate, or a person in any public employment, how invaluable is the habitual supremacy of these sentiments!

The Creator has bestowed talents in different degrees on different individuals, and also limited their powers; consequently, by confining their attention to one department of labour they execute it better—an arrangement which amounts to a direct institution of separate trades and professions. Under the natural laws, then, the manufacturer may pursue his calling with the approbation of all the moral sentiments, for he is dedicating his talents to supplying the wants of his fellow-men; and how much more successful will he be, if his every proceeding be accompanied by the desire to act benevolently and honestly towards those who are to consume and pay for the products of his labour! he cannot gratify his acquisitiveness half so successfully by any other method. The same remark applies to the merchant, the lawyer, and the physician. The lawyer and the physician who consult, as a paramount object, the interests of their clients and patients, obtain not only the direct reward of gratifying their own moral faculties, which is no slight enjoyment, but also high respect and a well-founded reputation, combined with increasing emolument, not grudgingly paid, but willingly offered by persons who feel the worth of the services bestowed.

Three conditions are required by the moral and intellectual laws, which must all be observed to ensure their rewards. 1*st*, The department of industry selected must be really useful to human beings—benevolence demands this; 2*d*, The amount of labour bestowed must bear a just proportion to the demand for the commodity produced—intellect requires this; and, 3*d*, In our social connections, we must scrupulously attend to the fact that different individuals possess different developments of brain, and in consequence different natural talents and dispositions,—and we must rely on each only to the extent warranted by his natural endowments.

If, then, a man has received at birth a sound organic constitution and favourably developed brain, and if he lives in accordance with the physical, the organic, the moral, and the intellectual laws, it appears to me that, in the constitution of the world, he has received from the Creator an assurance

of provision for his animal wants, and of high enjoyment from the legitimate exercise of his various mental powers.

I have already observed, that before we can obey the Creator's institutions, we must know them; that the sciences which teach the physical laws are natural philosophy and chemistry, while the organic laws belong to the department of anatomy and physiology: and I now add, that it is the business of the Political Economist to unfold the kinds of industry that are really necessary to the welfare of mankind, and the extent of labour that will meet with a just reward. The leading object of political economy is to increase enjoyment, by directing the application of industry. To attain this end, however, it is obviously necessary that the nature of Man, the constitution of the physical world, and the relations between these, should be known. Hitherto, the knowledge of the former of these elementary parts has been deficient; and in consequence, the labours of political economists have been productive of little practical advantage, in comparison with what they may yield when founded on a more perfect basis. The masters in economical science have not taught that the world is arranged in accordance with the harmonious activity of all our faculties,—the moral sentiments and intellect, in cases of conflict, holding the supremacy;—that, consequently, to render Man happy, *his leading pursuits must be such as will exercise and gratify all his powers*,—and that his life will necessarily be miserable, if devoted exclusively to the production of wealth. They have proceeded on the notion that the accumulation of wealth is the *summum bonum*. But all history testifies that national happiness does not invariably increase in proportion to national riches; and until they shall teach that intelligence and morality are the foundation of all lasting prosperity, they will not interest the great body of mankind, nor give a practical direction to their efforts. Further, in deducing the practical consequences of the infringement of economical laws, they often omit to give due prominence to the mitigating influence of the moral laws. They show, for example,

that the Irish peasantry, by multiplying their numbers beyond the extent of their capital and of profitable fields of labour, exposed themselves and their offspring to the horrors of destitution. This fact is undeniably true; but they omit to add that it was the duty of the enlightened and wealthy members of society to mitigate the severity of that destitution, by assisting the sufferers, while they enforced on them stricter obedience in future to the natural law. Indeed, society suffers a double disadvantage from the present severance between moral and economical science. Benevolent men relieve the destitute, but rarely think of removing the causes of destitution; while the poor, uninstructed regarding the connection between their own conduct and their misery, rely more and more on charitable relief, and seldom endeavour to abandon the course of action which has led to their degradation.

If the views contained in the present treatise are sound, it will become a leading object with future masters in economic science, to teach that Man, in his whole conduct, must conform to the natural laws, as the only means of saving himself from ceaseless evil.

The proposal that men in general should be taught natural philosophy, anatomy, physiology, political economy, and the other sciences that expound the natural laws, has been sneered at as ridiculous. But I would ask, In what occupations are human beings so urgently engaged, that *they have no leisure* to bestow on the study of the Creator's laws, from the influence of which they cannot escape? The delivery of a course of lectures on natural philosophy would occupy sixty or seventy hours; a course on anatomy and physiology the same; and a pretty full course on phrenology could be delivered in forty hours! These, once or twice repeated, would serve to initiate the student in the sciences in question, so that he could afterwards advance in them by the aid of observation and books. Is life, then, so brief, and are our hours so urgently occupied by higher and more important duties, that we cannot afford these pittances of time to learn

the laws that regulate our existence? No! The only difficulty lies in exciting the *desire* for knowledge; for when that is attained, *time* will not be wanting.

No idea can be more preposterous, than that human beings have no time to study and obey the natural laws. These laws, when neglected, punish so severely, that the offender loses more time in undergoing his chastisement, than would be requisite to obey them. A gentleman extensively engaged in business, whose nervous and digestive systems were impaired by neglect of the organic laws, was desired to walk in the open air at least one hour a-day; to repose from all exertion, bodily and mental, for an hour after breakfast, and another hour after dinner (because the brain cannot expend its energy to good purpose in thinking and in aiding digestion at the same time); and to practise moderation in diet: this last injunction he regularly observed, but he laughed at the idea of his having three hours a-day to spare for attention to his health. The reply was, that the organic laws admit of no exception, and that he must either obey them or suffer the consequences; but that the time lost in enduring the punishment would be double or treble that requisite for obedience: and, accordingly, the fact was so. Instead of keeping an appointment, it was usual for him to send a note, perhaps at two o'clock in the afternoon, in these terms: —"I was so distressed with headache last night, that I never closed my eyes; and to-day I am still incapable of being out of bed." On other occasions, he was out of bed, but apologised for incapacity to attend to business, on account of an intolerable pain in the region of the stomach. In short, if the hours lost in these painful sufferings had been added together, and distributed over the days when he was able for duty, they would have far outnumbered those which would have sufficed for obedience to the organic laws—and with this difference in the results: by neglecting them, he lost both his hours and his enjoyment; whereas, by obedience, he would have secured aptitude for business, and a pleasing consciousness of existence.

We shall understand the operation of the moral and intellectual laws more completely, by attending to the evils which arise from neglect of them.

I. Let us consider INDIVIDUALS. At present, the almost universal persuasion of civilised men is, that happiness consists in the possession of wealth, power, and external splendour; objects related to the animal faculties and intellect much more than to the moral sentiments. In consequence, each individual starts in pursuit of these as the chief business of his life; and, in the ardour of the chase, he recognises no limitations to the means which he may employ, except those imposed by the municipal law. He does not perceive or acknowledge the existence of natural laws, determining not only the sources of his happiness, but the steps by which it may be attained. From this moral and intellectual blindness, innumerable merchants and manufacturers hasten to be rich beyond the course of nature: that is to say, they engage in enterprises far exceeding the extent of their capital and capacity; they place their property in the hands of debtors, whose natural talents and morality are so low that they should never have been intrusted with a shilling; they send their goods to sea without insuring them, or leave them uninsured in their warehouses; they ask pecuniary accommodation from other merchants to enable them to carry on imprudent speculations, and become security for them in return, and both fall into misfortunes; or they live in splendour and extravagance, far beyond the limit of the natural return of their capital and talents, and speedily reach ruin as their goal. In every one of these instances, the calamity is obviously the consequence of infringement of the moral and intellectual laws.

The lawyer, medical practitioner, or probationer in the church, who is disappointed of his reward, will, in most cases, be found to have placed himself in a profession for which his natural talents and dispositions did not fit him, or to have pursued his vocation under the guidance chiefly of the lower

propensities; preferring selfishness to honourable regard for the interests of his employers. Want of success in these professions appears to me to be owing chiefly to three causes. *First*, If the brain be too small, or constitutionally lymphatic, the mind will not act with sufficient energy to make an impression. *Secondly*, Some particular organs indispensably requisite to success may be small—as those of language or causality in a lawyer; deficiency in the one rendering him incapable of ready utterance, and deficiency in the other making him destitute of that intuitive sagacity, which sees at a glance the bearing of the facts and principles founded on by his adversary, and estimates the just inferences that follow. A lawyer who is weak in this power, appears to his client like a pilot who knows not the shoals and the rocks. His deficiency is perceived whenever difficulty is encountered, and he is pronounced unfit to take charge of great interests; he is then passed by, and suffers the penalty of having made an erroneous choice of a profession. The *third* cause is predominance of the animal and selfish faculties. The client and the patient discriminate intuitively between the cold, pitiless, but pretending manner of acquisitiveness and love of approbation, and the unpretending genuine warmth of benevolence, veneration, and conscientiousness; and they very soon discover that the intellect inspired by the latter sees more clearly, and promotes more successfully, their interests, than when animated only by the former. The victim of selfishness either never rises, or quickly sinks, wondering why his merits are not appreciated.

In all these instances, the failure of the merchant, and the bad success of the lawyer and physician, are the consequences of infringement of the natural laws, either by himself or by those with whom he is connected; and the evil they suffer is the natural consequence of having failed in a great duty, not only to society, but to themselves.

II. Some of the CALAMITIES ARISING FROM INFRINGEMENT OF THE SOCIAL LAW may next be considered.

The greatest difficulties present themselves in tracing the operation of the moral and intellectual laws in the wide field of social life. A man may be enabled to comprehend how, if he commit an error, he should suffer a particular punishment; but when calamity overtakes whole classes of the community, each person absolves himself from all share of the blame, and regards himself simply as the victim of a general but inscrutable visitation. Let us, then, examine briefly the Social Law.

In regarding the human faculties, we perceive that numberless gratifications spring from the social state. The muscles of a single individual could not rear the habitations, build the ships, forge the anchors, construct the machinery, or, in short, produce the countless means of enjoyment that everywhere surround us, and which are attained in consequence of combinations of human power and skill, to accomplish a common end. Further, social intercourse is the means of affording direct gratification to a variety of our mental faculties. If we had lived in solitude, the propensities, sentiments, and reflecting faculties would have been deprived—some of them absolutely, and others of them nearly—of all opportunities of gratification. The social law, then, is the source of the highest delights of our nature, and its institution indicates the greatest benevolence towards us in the Creator.

Still, however, this law does not suspend or subvert the laws instituted for the regulation of the conduct of Man as an individual. If a man desire to take command of a ship and arrive safely at its destination, the natural laws require that his intellectual faculties should have been previously instructed in navigation, in the boundaries of the seas, and in the features of the coasts to be visited; that he should know and avoid the shoals, currents, and eddies; that he should trim his canvass in proportion to the gale; and that his animal faculties should be kept so much under subjection to his moral sentiments, that he should not abandon himself to drunkenness, sloth, or any animal indulgence, when he

should be watchful at his duty. If he obey the natural laws, he will be safe; but if he disobey them, he may be drowned.* Only a small vessel, however, bound on a short voyage, could be managed by one man; for he must sleep, and he could not do so and manage his sails at the same time. It is the interest, therefore, of those who wish to go to sea, to avail themselves of the social law; that is, to combine their powers under one leader. By doing so, they may sail in a larger ship, have more ample stores of provisions, obtain intervals for rest, and enjoy each other's society. If, at the same time, they choose a captain qualified for his office, they will sail in safety; whereas, if they place in charge of the ship a man whose intellectual faculties are weak, whose animal propensities are strong, whose moral sentiments are in abeyance, and who, in consequence, is ignorant of navigation and habitually neglects the natural laws, they may suffer shipwreck.

It may be objected that the crew and passengers do not appoint the captain; but they are at liberty to embark on board, or stay out of, a particular ship, according as they discover the captain to possess the qualities necessary for command, or not. This, at present, ninety-nine persons out of a hundred never inquire into; but an equal number neglect other natural laws, and suffer the penalty, because they have not been instructed in the existence and effects of these, or trained to obey them. But they have received from Nature the power of observing them; and, besides, I offer this merely as an illustration of the mode of operation of the social law.

Again: By engaging persons to assist us in the duties of life, our own tasks may be rendered less burdensome; but we must employ individuals who know the moral law, and have the desire to act under it; otherwise we may be robbed, cheated, or murdered, by ill-chosen confidential assistants. Phrenology, by affording facilities for discovering, prior to

* I waive at present the question of storms which he could not foresee, as these fall under the head of ignorance of natural laws which may be subsequently discovered.

experience, the natural talents and dispositions of individuals, adds to our means of observing this law.

By entering into copartnership, merchants and others may extend the field of their exertions, and gain advantages beyond those they could reap as individuals. But, by the natural law, each must take care that his partner knows, and is inclined to obey, the moral and intellectual laws, as the only condition on which the Creator will permit him *securely* to reap the advantages of the social compact. If a partner in China be deficient in intellect and moral sentiment, another in London may be utterly ruined. It is said that this is an example of the innocent suffering for, or at least along with, the guilty; but it is not so. It is an example of a person seeking to obtain the *advantages* of the social law without conceiving himself bound to fulfil the conditions required by it; the first of which is, that those of whose services he avails himself shall be capable and willing to observe the moral and intellectual laws.

Let us now advert to the calamities which overtake whole classes of men, or COMMUNITIES, under the social law,—trace their origin,—and see how far they are attributable to infringement of the Creator's laws.

If the whole faculties of Man are intended by the Creator to be harmoniously gratified, and if all natural institutions are in accordance with them, it follows that large communities of men, who in their systematic conduct habitually seek the gratification of the inferior propensities, and devote either no part, or too small and inadequate a part, of their time to objects related to their higher powers, act in opposition to nature, and will suffer the punishment of sorrow and disappointment. To confine our attention to our own country, I may remark, that until the early part of this century the labouring population of Britain were not taught to refrain from multiplying their numbers beyond the demand for their labour; and that even now this is not viewed as a duty, nor acted on as a principle, by one in ten thousand of those whose happiness or misery depends on observance of the rule.

The doctrine of Malthus, that "population cannot go on perpetually increasing, without pressing on the limits of the means of subsistence, and that a check of some kind or other must, sooner or later, be opposed to it," amounts to this—that the means of subsistence are not susceptible of such rapid and unlimited increase as the numbers of the people, and that, in consequence, the amative propensity must be restrained by reason, otherwise population will be checked by misery. This principle is in accordance with the views of human nature maintained in the present treatise, and applies to all the faculties. Thus philoprogenitiveness, when indulged in opposition to reason, leads to spoiling children, which is followed directly by misery both to them and to their parents. Acquisitiveness, when uncontrolled by wisdom and morality, leads to avarice or theft—and these, again, carry suffering in their train. I can discover no reason why amativeness should enjoy an exemption from the laws which circumscribe all the other faculties within the limits of prudence and virtue. God has imposed this degree of restraint on Man as a duty, and made arrangements in nature for enforcing it.*

But so little are such views appreciated, that the lives of the inhabitants of Great Britain generally are devoted to the pursuit of wealth, of power and distinction, or of pleasure: in other words, the great object of the labouring classes is to gratify the inferior propensities; of the mercantile, manufacturing, and agricultural population, to gratify acquisitiveness and self-esteem by accumulating wealth; of the more intelligent class of gentlemen, to indulge self-esteem and love of approbation by attaining political, literary, or philosophical eminence—and of another portion, by maintaining supremacy in fashion: and these gratifications are too frequently sought by means not in accordance with the dictates of the higher sentiments, but by the joint aid of the

* Some of these are adverted to in my Lectures on Moral Philosophy, third edition, p. 33; also in Note W. appended to the reprint of the Hon. E. P. Hurlbut's Essays on Human Rights and their Political Guaranties, p. 93; Edin. 1847.

intellect and the animal powers. If the harmonious action of the whole faculties, and, in cases of conflict, the supremacy of the moral sentiments and intellect, be the natural law,—we should expect that, after rational restraint on population and the proper use of machinery, such moderate labour as will leave ample time for the exercise of the higher powers will suffice to provide for human wants; and that if this exercise be neglected, and the time which should be dedicated to it be employed in labour to gratify the propensities, direct evil will ensue—and this accordingly appears to me to be the result.

By means of machinery, and the aids derived from science, the ground may be cultivated, and every necessary and luxury of life, requisite for the wants of a moral and intelligent population, may be produced in abundance by a moderate expenditure of labour. If men were to stop when they had reached this point, and to dedicate the residue of each day to moral and intellectual pursuits, the consequence would be the existence of ready and steady, because not overstocked, markets. Labour, pursued till it provided abundance, but not superfluity, would meet with a certain and just reward, and would also yield a vast increase of happiness; for no joy equals that which springs from the harmonious gratification of our whole faculties in accordance with the Creator's laws. Further, morality would be improved; for men, being happy, would become less vicious: and, lastly, there would be improvement in the organic, moral, and intellectual capabilities of the race; for the active moral and intellectual organs of the parents would tend to cause an increase in the volume of these in their offspring—and each successive generation would start not only with greater stores of acquired knowledge than those which its predecessors possessed, but with higher natural capabilities of applying them to advantage.

Before merchants and manufacturers can be expected to act in this manner, a great change must, it is true, be effected in their sentiments and perceptions; but so was a striking

revolution effected in the views of the farmers near Edinburgh, before they were induced to remove the pools stagnant between the ridges, and banished ague from their district. If any reader will compare the state of Scotland during the thirteenth, fourteenth, and fifteenth centuries (correctly and spiritedly represented in Sir Walter Scott's *Tales of a Grandfather*), with its present condition, in regard to knowledge, morality, religion, and the relative ascendency of the rational over the animal part of our nature, he will recognise so great an improvement in later times, that the commencement of the millennium itself, five or six hundred years hence, would scarcely be a greater advance beyond the present, than the present is beyond the past. If the laws of the Creator are here rightly interpreted, it is obvious that, were they taught as elementary truths to every class of the community, and were the sentiment of veneration called in to enforce obedience to them, a set of new motives and principles would be brought into play, calculated to accelerate the change; especially if it were seen—what, in the next place, I proceed to show—that the consequences of neglecting these laws are serious visitations of suffering which no sagacity can evade.

According to the views advocated in this work, the system on which the manufactures of Great Britain are at present conducted, is as great an aberration from the laws of nature as were any of the previous pursuits of mankind, recorded in the history of the world. It implies not only that the vast body of the people shall for ever remain in a condition little superior to that of mere working animals, in order that, by means of cheap labour, our traders may undersell the merchants of all other nations; but also that our manufactures and commerce shall enjoy an indefinite extension—this being essential to their prosperity as they are now conducted, although in the nature of things impossible. On the 13th of May 1830, Mr Slaney, M.P., called the attention of the House of Commons to the increase which had taken place in the number of those employed in manufacturing and

mechanical occupations, as compared with the agricultural class. He stated, that "in England, the former, as compared with the latter, were 6 to 5 in 1801; they were as 8 to 5 in 1821; and, taking the increase of population to have proceeded in the same ratio, they were now as 2 to 1. In Scotland, the increase had been still more extraordinary. In that country they were as 5 to 6 in 1801; as 9 to 6 in 1821; and now they were as 2 to 1. The increase in the general population during the last twenty years had been 30 per cent.; in the manufacturing population, it had been 40 per cent.; in Manchester, Coventry, Liverpool, and Birmingham, the increase had been 50 per cent.; in Leeds, it had been 54 per cent.; in Glasgow, it had been 100 per cent." Here we perceive that a vast population has been called into existence, and trained to manufacturing industry. I do not doubt that the skill and labour of this portion of the people have greatly contributed to the wealth of the nation; but I fear that the happiness of the labourers has not kept pace with the riches which they have created. The causes of their present condition appear to be the following:—

Several millions of human beings have been trained to manufactures, and are unfit for any other occupation. In consequence of the rapid increase of their numbers, and of improvements in machinery, the supply of labour has for many years outstripped the demand for it, and wages have fallen ruinously low.* By a coincidence, which at first sight appears unfortunate, much of the machinery of modern invention may be managed by children. The parent who, by his own labour for twelve hours a-day, is able to earn only seven shillings a-week, adds to his income one shilling and sixpence or two shillings a-week for each child whom he can bring to the manufactory: and by the united wages of the family a moderate subsistence may be eked out. Both

* The text was written in 1827, and since that period several important fluctuations have taken place in the profits of manufacturers and in the rate of wages; but the general system continued unchanged till freedom of trade produced, in the middle of this century, so marked an improvement in the rates of remuneration of labour.

parents and children, however, are reduced to a hopeless condition of toil; for their periods of labour are so long, and their remuneration is so small, that starvation stares each of them in the face when they either relax from exertion or cease to live in combination. Mental culture and moral and intellectual enjoyment are excluded, and their place is supplied by penury and labour. Dr Chalmers reports that in our great towns, whole masses of this class of the people are living in profound ignorance and practical heathenism. The system tends constantly to increase the evils of which it is the source. Young persons, when they arrive at manhood, find themselves scarcely able to subsist by their individual exertions, whereas, if they can add the scanty income of three or four children to their own, their condition is in some degree improved. House-rent, and the expenses of furniture and fuel, are not increased by the wants, in proportion to the contributions, of the young. Adults are thus tempted—nay, almost driven by necessity—to contract early marriages, to rear a numerous offspring, devoted to the same employments with themselves, and in this way to add to the supply of labour, already in excess. The children grow up uneducated and reckless, and in their turn follow the same course; and thus, however widely the manufactures of Great Britain may have extended, a still further and indeed an indefinite extension of them seems to be demanded; for the system produces a constantly increasing, yet an ignorant, starving, and miserable population, more than adequate to supply all the labour that can be profitably expended. The consequence is, that markets are overstocked with produce, and prices first fall ruinously low; the operatives are thrown out of work, and left in destitution, till the surplus produce of their formerly excessive labour, and perhaps something more, are consumed: after this, prices rise too high, in consequence of the supply falling rather below the demand; the labourers then resume their toil, on their former system of excessive exertion; they again overstock the market, again want employment, and suffer misery.

In the years 1825–6–7, this operation of the natural laws was strikingly exhibited; large bodies of starving unemployed labourers were supported on charity. How many hours did they not stand idle, and how much of excessive toil would not these hours have relieved, if distributed over the periods when they were overworked! The results of that excessive exertion were seen in the form of untenanted houses and of shapeless piles of goods decaying in warehouses—in short, in every form in which the products of misapplied industry could go to ruin. These observations are strikingly illustrated by the following official report:—

"*State of the Unemployed Operatives resident in Edinburgh, who are supplied with work by a Committee constituted for that purpose, according to a list made up on Wednesday the* 14*th March* 1827.

"The number of unemployed operatives who have been remitted by the committee for work, up to the 14th of March, are .	1481
"And the number of cases they have rejected, after having been particularly investigated, for being bad characters, giving in false statements, or being only a short time out of work, &c., &c., are	446
Making together,	1927

"Besides these, several hundreds have been rejected by the committee, as, from the applicants' *own* statements, they were not considered as cases entitled to receive relief, and were not, therefore, remitted for investigation.

"The wages allowed is 5s. per week, with a peck of meal to those who have families. Some youths are only allowed 3s. of wages.

"The particular occupations of those sent to work are as follows:—242 masons, 643 labourers, 66 joiners, 19 plasterers, 76 sawyers, 19 slaters, 45 smiths, 40 painters, 36 tailors, 55 shoemakers, 20 gardeners, 229 various trades; total, 1481."

Edinburgh is not a manufacturing city; and if so much misery existed in it in proportion to its population, what must have been the condition of Glasgow, Manchester, and other manufacturing towns?

Here, then, the Creator's laws show themselves paramount, even when men set themselves systematically to infringe them. He intended the human race, under the moral law, not to pursue wealth excessively, but to labour only during a certain moderate portion of their time; and although they do their utmost to defeat this intention, they cannot succeed: they are constrained to remain idle as many days and hours, while their surplus produce is consuming, as would have served for the due exercise of their moral and intellectual faculties, and the preservation of their health, if they had dedicated them regularly to these ends from day to day, as time passed over their heads. But their punishment proceeds: the extreme exhaustion of nervous and muscular energy, with the absence of all moral and intellectual excitement, create an irresistible craving for ardent spirits; these call the organs of the animal propensities into predominant activity; this condition of mind and body descends to their children; increased crime and a deteriorating population are the results; while the moral and intellectual incapacity for arresting the evil increases with the lapse of every generation.

According to the principles of the present treatise, what are called by commercial men "times of prosperity," are seasons of the greatest infringement of the natural laws, and precursors of great calamities. Times are not reckoned prosperous unless *all* the industrious population is employed *the whole day* (hours of eating and sleeping only excepted) in the production of *wealth*. This is a dedication of their whole lives to the service of the propensities, and must necessarily terminate in evil, if the world be constituted on the principle of the harmonious gratification of all our powers.

This truth has already been illustrated more than once in the history of commerce. The following is a recent example:—

By the combination-laws, workmen were punishable for uniting to obtain a rise of wages, when an extraordinary demand occurred for their labour. These laws, being obviously unjust, were at length repealed. In the summer and autumn

of 1825, however, commercial men conceived themselves to have reached the highest point of prosperity, and the demand for labour was unlimited. The operatives availed themselves of the opportunity to improve their condition; formed extensive combinations; and, because their demands were not complied with, struck work, and continued idle for months in succession. The master-manufacturers clamoured against the new law, and complained that the country would be ruined if combinations were not again declared illegal, and suppressed by force. According to the principles expounded in this work, the just law must from the first have been *the most beneficial for all parties* affected by it; and the result amply confirmed this idea. Subsequent events showed that the extraordinary demand for labourers in 1825 was entirely factitious, fostered by an overwhelming issue of bank paper, much of which ultimately proved to be worthless; in short, that the master-manufacturers had been engaged in an extensive system of speculative over-production, to which the combinations of the workmen presented a *natural check*. The ruin that overtook the masters in 1826 arose from their having accumulated, under the influence of unbridled acquisitiveness, vast stores of commodities which were not required by society. To have compelled the labourers to manufacture more at their bidding, would have aggravated the evil. It is a well-known fact, that those masters whose operatives most resolutely refused to work, and who, on this account, clamoured most loudly against the law, were the greatest gainers in the end. Their stocks of goods were sold off at high prices during the speculative period; and when the revulsion came, instead of being ruined by the fall of property, they were prepared, with their capital at command, to avail themselves of the depreciation, to make new and highly profitable investments. Here, again, we perceive the law of justice vindicating itself, and benefiting by its operation even those who blindly denounce it as injurious to their interests.

As a counterpart to the injustice long practised by the masters against the operatives while the combination-laws

existed, we are now afflicted by attempts at equal injustice on the part of the operatives against their employers, in the form of trades' unions. These are great combinations of the working-classes, by the rules of which each workman contributes a portion of his wages to a general fund, to be employed in supporting their interests against those of their masters. They resolve on terms and rates of wages; and if the masters do not comply with them, the operatives strike work, are supported out of the collected fund, and subject their employers to all the losses naturally attendant on the suspension of their business.

Combinations of workmen would be legitimate and beneficial if they were conducted on moral principles; but many of them, in their constitution and action, are not so, but engines of oppression. Some of them, for instance, insist on limiting the number of apprentices who may be received into an establishment, allowing only one apprentice to a certain number of journeymen employed. This is a clear infraction of the rights of the young who are seeking to enter a trade by which they may gain their bread; and of the masters, who have a just title to employ that class of persons best suited to the purposes of their manufacture. Not only so, but the unions persecute, sometimes by waylaying and beating, and almost universally by annoying and ejecting from their workshops, those individuals among themselves who decline to join in their combinations, and who are satisfied with the terms offered to them by their employers. This course of action is tyranny and oppression, an outrage on the rights of the operatives themselves, as well as on those of their masters, and it cannot benefit those who pursue it. The operatives are clearly entitled to combine and to collect a general fund for the protection of their own just rights, but they are not absolved from the obligations of the laws of God, or from the consequences of infringing them. The moment they endeavour to promote their own class-interests by injustice and the denial to others of the right of self-judgment, they become tyrants, and force all good men to

resist them. By such conduct, they infuse the elements of inevitable evils, of ultimate disappointment and dissolution into their associations, and no human sagacity can save them from these consequences.

A practical faith in the doctrine that the world is arranged by the Creator in harmony with all the faculties, the moral sentiments and intellect governing, would be of unspeakable advantage to all men; for they would then be able to pursue, with greater confidence, the course dictated by moral rectitude, convinced that the result would prove beneficial, even although, when they took the first step, they could not distinctly perceive the issue. Dugald Stewart remarks that Fenelon, in his *Adventures of Telemachus*, makes Mentor anticipate some of the profoundest and most valuable dictrines of modern political economy, respecting the principles and advantages of free trade, merely by causing him to utter the simple dictates of benevolence and justice in regard to commerce. In Fenelon's day, such ideas were regarded as fitted only for adorning sentimental romances; but they have since been discovered to be not only philosophical truths, but beneficial practical maxims. This is the case, apparently because the world is really arranged on the principle of the supremacy of the moral and intellectual faculties, so that, when men act agreeably to their dictates, the consequences, although they cannot all be foreseen, naturally tend towards good.

In the whole system of the education and treatment of the labouring population, the laws of the Creator are neglected or infringed. Life with this class is spent to so great an extent in labour, that their moral and intellectual powers are stinted of exercise and gratification; and their mental enjoyments, in consequence, are too much confined to the pleasures afforded by the animal propensities. Their existence is too little *rational*. The chief duty performed by their higher faculties, is to communicate so much intelligence and honesty as to enable them to execute their labours with fidelity and skill. I speak, of course, of the great body of the

labouring population : there are many individual exceptions, who possess higher attainments ; and I mean no disrespect to any portion of this most useful and deserving class of society : on the contrary, I represent their condition in what appears to me to be its true light, only with a view to excite them to amend it.

Does human nature, then, admit of such a modification of the employments and habits of this class, as to raise them to the condition of beings whose pleasures shall embrace their rational natures?—that is, of creatures whose bodily powers and animal propensities shall be subservient to their moral and intellectual faculties, and who shall derive their enjoyment from the harmonious action of all their powers. To attain this end, it would not be necessary that they should *cease to labour ;* on the contrary, the necessity of labour to the enjoyment of life is imprinted in strong characters on the structure of Man. The osseous, muscular, and nervous systems of the body, all require exercise as a condition of health; while the digestive and sanguiferous apparatus rapidly fall into disorder if due exertion be neglected. Exercise of the body is labour ; and labour directed to a useful purpose is more beneficial to the corporeal organs, and also more pleasing to the mind, than when undertaken for no other end than the preservation of health.* Commerce is rendered advantageous by the Creator, because different climates yield different productions, and different nations excel in different employments. Agriculture, manufactures, and commerce, therefore, are adapted to Man's nature, and I do not undervalue them. But the prosecution of them is not the *chief end* of human existence, even on earth. Labour is beneficial to the whole human economy, and it is mere folly to regard it as in itself an evil ; but in order that it may be enjoyed, it must be moderate in intensity and duration. I say *enjoyed ;* because moderate exertion is pleasure,—and it is only the suffering attendant on labour carried to *excess* which has

* See Dr Combe's Physiology applied to Health and Education, 15th edition, chap. vii.

given rise to the common opinion that retirement from active industry is the goal of happiness.

It may be objected that a healthy and vigorous man is not oppressed by ten or twelve hours' labour a-day; and I grant that, if he be well fed, his strength may not be so much exhausted by this exertion as to cause him pain. But this is regarding him merely as a working animal. My proposition is, that after ten or twelve hours of muscular exertion a-day, continued for six days in the week, the labourer is not in a fit condition for that active exercise of his moral and intellectual faculties which truly constitutes him a rational being. The exercise of these powers depends on the condition of the brain and nervous system, and these are exhausted and deadened by too much muscular exertion; the foxhunter and the ploughman, after a full day's work, fall asleep when they sit within doors and attempt to read or think. The truth of this proposition is demonstrable on physiological principles, and is supported by general experience; nevertheless, the teachers of mankind have too often neglected it. The first change, therefore, needed for the improvement of the working-classes, is a limitation of the hours of labour, and the dedication of a portion of time daily to the exercise of the mental faculties.

So far from this limitation being unattainable, it appears to me that the progress of arts, sciences, and society, is rapidly tending towards its adoption. Ordinary observers appear to conceive man's chief end, in Britain at least, to be to manufacture hardware, broadcloth, and cotton goods, for the use of the whole world, and to store up wealth. They forget that the same impulse which inspires the British with so much ardour in manufacturing, will sooner or later inspire other nations also; and that if all Europe shall follow our example, and employ efficient machinery and a large proportion of their population in our branches of industry—which they are doing more and more—the four quarters of the globe will at length be deluged with manufactured goods, only part of which will be required. When this state of things

shall arrive,—and in proportion as knowledge and civilisation are diffused it will approach,—labourers will be compelled by dire necessity to abridge their toil; because excessive labour will cease to be remunerated. The admirable inventions which are the boast and glory of civilised men, are believed by many to be at this moment adding to the misery and degradation of the people. Power-looms, steam-carriages, and steam-ships, it is asserted, have hitherto all operated directly in increasing the hours of exertion, and abridging the reward of the labourer! Can we believe that God has bestowed on us the gift of an almost creative power, solely to increase the wretchedness of the many, and minister to the luxury of the few? Impossible! The ultimate effect of mechanical inventions on human society appears to be not yet divined. I hail them as the grand instruments of civilisation, by giving leisure to the great mass of the people to cultivate and enjoy their moral, intellectual, and religious faculties.

To enable Man to follow pursuits connected with his higher endowments, provision for the wants of his animal nature is necessary—namely, food, raiment, and comfortable lodging; and muscular vigour, intellect, and mechanical ability have been conferred on him, apparently with the design that he should build houses, plough fields, and fabricate commodities. But we have no warrant for believing that any portion of the people are doomed to dedicate their whole lives and energies, aided by all mechanical inventions, to these ends as their proper business, to the neglect of the study of the works and obedience to the will of the Creator. Has Man been permitted to discover the steam-engine, and apply it in propelling ships on the ocean and carriages on railways, in spinning, weaving, and forging iron,—and has he been gifted with intellect to discover the astonishing powers of physical agents, revealed by chemistry and mechanics,—only that he may be enabled to build more houses, weave more cloth, and forge more iron, without any direct reference to his moral and intellectual improvement? If a person unaided by

animal or mechanical power had wished to travel from Manchester to Liverpool, a distance of thirty miles, he would have been under the necessity of devoting ten or twelve hours of time, and considerable muscular energy, to the task. When roads and carriages were constructed, and horses trained, he could, by their assistance, have accomplished the same journey in four hours, with little fatigue; and now, when railways and steam-engines have been successfully completed, he may travel that distance without any bodily fatigue whatever, in an hour; and I ask, For what purpose has Providence bestowed on him the nine or ten hours of spare time which are thus set free? I humbly answer, That he may be enabled to cultivate his moral, intellectual, and religious faculties.

Again: before steam-engines were applied to spinning and weaving, a man must have laboured perhaps for a month, in order to produce linen, woollen, and cotton cloth, necessary to cover his own person for a year; or, in case of a division of labour, a twelfth part of the population would necessarily be constantly engaged in this employment. By the application of steam, the same ends may be accomplished in a day. I repeat the inquiry, For what purpose has Providence bestowed the twenty-nine days out of the month, set free by the invention of the steam-engine and machinery? These proportions are not named as statistically correct, but as mere illustrations of my proposition, that every discovery in natural science, and every invention in mechanics, has a direct tendency to increase the leisure of Man, and to enable him to provide for his physical wants with less laborious exertion.

The question recurs, Is it the object of Providence, in thus favouring the human race, to enable only a portion of them to enjoy the highest luxuries, while the mass shall continue labouring animals; or is it His intention to enable *all* to cultivate and enjoy their rational nature?

When mechanical inventions shall be generally diffused over the world, they will increase the powers of production

to such an extent, as to supply, by moderate labour, every want of Man; and then the great body of the people will find themselves in possession of reasonable leisure, in spite of every exertion to avoid it. Great misery will probably be suffered from persevering in the present course of action, before their eyes shall be opened to this result. The first effect of these stupendous inventions threatens to be to accumulate wealth in the hands of a few, without proportionally abridging the toil, or adding to the comforts, of the many. This process of elevating a part of the community to affluence and power, and degrading the rest, threatens to proceed till the disparity of condition shall become intolerable to both, the labourer being utterly oppressed, and the higher classes harassed by insecurity. Then, probably, it may be recognised, that the real benefit of physical discovery is to give leisure to the mass of the people, which is the first requisite of true civilisation, knowledge being the second. The science of human nature will enable men at length to profit by exemption from excessive toil; and it may be hoped that, in the course of time, sincere attempts will be made to render all ranks prosperous and happy, by institutions formed in harmony with all the faculties of Man, and the order of God's providence on earth.

The same means will lead to the realisation of practical Christianity. A man whose active existence is engrossed by mere bodily labour, or by the pursuits of gain or ambition, lives under the predominance of faculties that do not produce the perfect Christian character. The true practical Christian possesses a vigorous and enlightened intellect, and moral affections glowing with gratitude to God and love to Man; but how can the people at large be enabled to attain this condition of mind, if stimulus for the intellect and the nobler sentiments be excluded by the daily routine of their occupations?

In some districts of England, the operatives have demanded an abridgment of labour without abatement of wages. This project was unjust, and proved unsuccessful. They should

have given up first one hour's labour, and the price of it, and waited till the increase of capital and of demand should have caused wages to rise to their former level; which, if they had restrained population, would certainly have happened. They should then have abated a second hour, submitting again to a reduction, and again waited for a reaction; and so on, till they had limited their labour to eight or nine hours a-day. The change must be gradual, and the end must be attained by *moral* means, else it will never be accomplished at all.

These were the remarks published in the earlier editions of this work; but in 1847 an act of Parliament was passed by the British Legislature, limiting the hours of labour of adults in factories to ten hours a-day. It is an enactment in harmony with the natural laws; and being therefore supported by the course of Providence, it has proved successful. The same limitation, however, adopted voluntarily from conviction, by both masters and men, would have been preferable. If both had recognised it as dictated by God's natural laws, and therefore calculated, in its ultimate effects, to promote their interests, they would have acted in the spirit of it, striven to cause it to succeed, and met temporary inconveniences with a firm faith that, by persevering in it as the right course, they would triumph in the end. If an opposite conviction possess the minds of many of them, their feelings will be directed against it, they will magnify difficulties, fear ruin, and may temporarily defeat it. The only other plausible objection which I have seen stated to the enactment is, that foreign nations, by working longer time, will be enabled to undersell our manfacturers, and by this means carry off their trade. To my mind, one answer to this suffices. They cannot do so without infringing the laws of health and of morals; for longer labour than ten hours a-day damages both mind and body, saps the foundations of physical and mental vigour in the labouring population, and besides affords facilities and temptations to capitalists to produce gluts in the market; which, again, by the order of nature, are inevitably followed by loss of stock to the em-

ployers, and by forced idleness to the employed. I therefore say, Let foreign nations reap all the advantages they can extract from a course of action against the Divine laws, and let us fear not! As certainly as the world is arranged by a just God, will they be found digging a pit into which their own feet will fall. Let us obey God's laws, and rely on His wisdom for the issues being profitable as well as pleasant. A healthy, moral, and intelligent people, trained to energetic action by labour commensurate to their natural strength, will never be beaten, even in the race of gain, by one that is jaded, ignorant, degraded, and immoral, in consequence of excessive toil.

The objection has been stated, that, even in the most improved condition of the mass of the people, there will still be found a considerable proportion of them so deficient in talent, so incapable of improvement, and so ignorant, that their labour will be worth little,—and, as they must obtain subsistence, no alternative will be left to them but to compensate their deficiency in skill by protracted exertion; and that hence their long-continued labour, furnished at a cheap rate, will affect all the classes above them, and indeed prevent the views now advocated from ever being realised. This objection resolves itself into the proposition, That the people have been destined by the Creator to be labouring animals, and that, from their inherent mental defects, they are incapable, generally, of being raised to any more honourable station: which is just the great point at issue between the old and the new philosophy. If mankind at large (for the industrious classes constitute so very great a majority of the race, that I may be allowed to speak of them as the whole) had been intended for mere hewers of wood and drawers of water, I do not believe that the moral and intellectual faculties, which they unquestionably possess, would have been bestowed on them; and as they do enjoy the rudiments of all the feelings and capacities which adorn the highest of men, and as these faculties are improvable, I cannot subscribe to the doctrine of their permanent incapacity.

The great cause of the stolidity of a portion of the people, is their want of mental training and instruction in childhood. The mind acts by means of the brain, and the brain is subject to all the laws of physiology. An untrained and uneducated man is one whose moral and intellectual organs are incapable of vigorous action through disuse, just as his legs would have been if he had never been permitted to walk. He is not only ignorant, but dull, stupid, and incapable of spontaneous reflection and persevering action in pursuit of a distant good. I speak, of course, only of average men; for individuals appear who are naturally so energetic that they educate themselves. The incapacity of the former may be removed by early training. I consider the operatives to be capable of learning, in the course of successive generations, to act as rational beings; and that whenever the great majority of them shall have acquired a sense of the true dignity of their nature, and a relish for the enjoyments afforded by their higher powers, they will so regulate the supply of labour in reference to the demand, as to obtain the means of subsistence in return for moderate exertion. When the natural laws shall have been fulfilled for some generations, it is probable that few imbeciles will exist, and that these few will be easily provided for, by the multitudes of generous and enlightened persons who will exist around them.

There is, however, force in the last-mentioned objection, considered in reference to the present generation. In throwing out these views, I embrace centuries of time. I see the slow progress of the human race in the past, and do not expect miracles in the future. If a sound principle, however, be developed—one having its root in nature—there is a certainty that it will wax strong and bear fruit in due season; but that season, from the character of the plant, may be a distant one. All who aim at benefiting mankind should keep this truth constantly in view. Almost every scheme is judged of by its effects on the living generation; whereas no great fountain of happiness ever flowed clear at first, or yielded its full sweets to those who opened it.

It is now an established principle in political economy, that Government ought not to interfere with industry. This maxim was highly necessary when rulers were grossly ignorant of all the natural laws which regulate production and the private interests of men; because then their enactments were, in general, absurd—they often did much harm, and rarely good. But if the science of human nature were once fully and clearly developed, it is probable that the rule might with great advantage be relaxed, and that the Legislature might considerably accelerate improvements, by adding the constraining authority of human laws to enactments already proclaimed by the Creator. Natural laws do exist, and evil is suffered if they are not obeyed. Now, if the great body of intelligent men in any state saw clearly, that a course of action pursued by the ill-informed of their fellow-subjects was the source of continual suffering, not only to the evildoers themselves, but to the whole community, it appears to me allowable that they should avert it by legislative enactment. If the majority of the middle classes resident in towns were to request Parliament to ordain shops in general to be shut at eight o'clock, or even at an earlier hour, to allow time for the cultivation of the rational faculties of those engaged in them, it would be no stretch of power to give effect to the petition: no evil would ensue, although the avaricious were prevented by law from continuing ignorant, and from forcing all their competitors in trade to resemble them in their defects. If the Creator have so constituted the world that men may execute all necessary business, and still have time to spare for the cultivation of their rational faculties, any enactments of the Legislature calculated to facilitate arrangements for accomplishing both ends, would be beneficial and successful, because accordant with nature; although the prejudiced and ignorant of the present generation might complain, and probably resist them. Their ignorant resistance would be the only real obstacle to the success of a law supported by the order of nature; but while they continued ignorant, they probably would defeat its beneficial operations.

Were it not for this ignorant unbelief in the advantages which follow from obedience to the natural laws, legislative enactment might go much further than it does; for its only limits seem to me to be those of the real knowledge of nature. As long as the Legislature enacts in conformity with nature, and the subjects give the law a willing and intelligent obedience, the result will be beneficial. At present, ignorance is too extensive and prevalent to authorise Parliament to venture far. From indications which already appear, however, I think it probable that the labouring classes will one day recognise Phrenology and the natural laws as deeply interesting to themselves; and whenever their minds shall be opened to rational views of their own constitution as men, and their position as members of society, I venture to predict that they will devote themselves to improvement, with a zeal and earnestness that in a few generations will change the condition of their order.

The consequences to *the middle ranks* of the community, of departing from the moral law, are in accordance with the effects on the lower. Uncertain gains,—continual fluctuations in fortune,—the absence of all reliance, in their pursuits, on moral and intellectual principles,—a gambling spirit,—an insatiable appetite for wealth,—alternately the extravagant joys of excessive prosperity and the bitter miseries of disappointed ambition,—render the lives of manufacturers and merchants too often scenes of vanity and vexation of spirit. Viewed as the *chief occupations* of a nation, manufactures and commerce are disowned by reason; for, as now conducted, they imply the permanent degradation of the great mass of the people. They already sap England's strength; and, unless they shall be regulated by sounder views than those which at present prevail, they may eventually involve the population in misery. The oscillations of fortune, which almost the whole of the middle ranks of Britain experience in consequence of the alternate depression and elevation of commerce and manufactures, are attended with extensive and severe suffering to individuals.

Deep, though often silent, agonies pierce the heart, when ruin is seen stealing, by slow but certain steps, on a young and helpless family; the mental struggle often undermines the parent's health, and conducts him prematurely to the grave. No death can be imagined more painful than that which arises from a broken spirit, robbed of its treasures, disappointed in its ambition, and conscious of failure in the whole scheme of life. The best affections of the soul are lacerated and agonized at the prospect of leaving their dearest objects to struggle with a cold and selfish world. Thousands of the middle ranks in Britain, unhappily, experience these misfortunes in every passing year. Nothing is more essential to happiness than fixed principles of action, on which we can rely for our present safety and future welfare; and the Creator's laws, when seen and followed, afford this support and delight to our faculties in a high degree. It is one, not the least, of the punishments that overtake the middle classes for neglecting these laws, that they do not, as a permanent condition of mind, feel secure and internally at peace with themselves. In days of prosperity, they continue to fear adversity. They live in a constant struggle with fortune; and when the excitement of business has subsided, vacuity and craving are experienced. These proceed from the moral and intellectual faculties calling aloud for gratification; but, owing to an imperfect education, either idleness, gossiping conversation, fashionable amusements, or intoxicating liquors, are resorted to, and with these a vain attempt is made to fill up the void of life. This class ardently desires a change that would remove the evils here described, and will zealously co-operate in diffusing every kind of knowledge by means of which this end may be accomplished.

The punishment which overtakes *the higher classes* is equally obvious. If they do not engage in some active pursuit, calculated to give scope to their energies, they suffer the evils of ennui, morbid irritability, and excessive relaxation of the functions of mind and body; which carry in

their train more suffering than even that which is entailed on the operatives by excessive labour. If they pursue ambition in the senate or the field, in literature or philosophy, their success is in exact proportion to the approach which they make to observance of the supremacy of the moral sentiments and intellect. Sully, Franklin, and Washington, may be contrasted with Sheridan and Buonaparte, as illustrations. Sheridan and Napoleon did not systematically pursue objects sanctioned by the higher sentiments and intellect, as the end of their exertions; and no person who is a judge of human emotions can read the history of their lives, and consider what must have passed within their minds, without coming to the conclusion, that even in their most brilliant moments of external prosperity the canker was gnawing within, and that there was no moral relish of the present, or reliance on the future, but a mingled tumult of inferior propensities and intellect, carrying with it an habitual feeling of unsatisfied desires.

Let us now consider the effect of the moral law on NATIONAL prosperity.

In surveying the faculties common to Man with the lower animals, we perceive that they are all selfish in their objects. "Throughout organic nature," says a friend who has supplied many valuable suggestions for this work, "we see that one species preys upon another, inflicting pain of various kinds, of various degrees of intensity and duration, mental and bodily. And among individuals of the same species, we find robbery, bullying, beating and murdering, pretty much as we do among men, allowing for the greater powers of mischief possessed by Man through his greater endowments of mind." When we include the whole races of the inferior animals, this representation is borne out by facts: fishes, for example, devour each other, the strong making their meals of the weak. Limits, however, are set by Nature to the inroads of these selfish faculties, in one individual and in one race, on the welfare of others, by denying reason to

all of them, and balancing instincts of evasion, escape, or defence, against instincts of aggression; so that, as a general result, the different races continue to exist, and to enjoy, while they live, no mean portion of happiness, even amidst all the dangers which surround them. If this be true of each race, it holds good as to the great mass of the individuals who compose it; for a race is not a being, but merely the aggregate of individuals composing it.

Man possesses these faculties, and when left under their guidance is truly an animal, and acts as the inferior races do. Nay, as his reflecting intellect gives him powers of forethought, combination, and arrangement, which have been denied to them, he becomes, when instigated chiefly by his propensities, a more cruel and extensive oppressor than they. Hitherto no great community of men have, in their national capacity, acknowledged the supremacy of the moral sentiments in their conduct towards other tribes and nations. They have all, to a greater or less extent, abandoned themselves, in their transactions with each other, to the direction of their animal propensities. The strong have invaded, robbed, conquered, and murdered the weak, until, in some instances, under the pressure of this animal supremacy, whole tribes of men have been swept from the face of the earth. One practical lesson taught by this portion of the history of Man is, that the animal faculties, being indispensable to our existence, should not, in any nation, be too much weakened. They constitute our defence against animal invasion; and while they should be restrained from excess, and directed in gratification by morality, they should never be enervated.

But as moral sentiments have been bestowed on Man, the question presents itself, Has the world, in reference to nations, been arranged in harmony with their supremacy, or has it not? Granting, what cannot be denied, that the strong in animal and intellectual power among nations, as among the inferior creatures, may make the weak their prey, is this the best mode of pursuing and working out their own happiness and prosperity?

The natural sources of wealth are *industry* and *economy*. By robbery and murder, men may for a time appropriate wealth already produced by their weaker brethren; but under such treatment, the sources of it must soon be exhausted. Producers cease to labour and to save, if not to exist, when exposed to barbarous rapacity. No human skill, therefore, can render a nation permanently rich by neglecting industry and prosecuting conquest and plunder.

If the world is constituted on the principle of the supremacy of the moral sentiments and intellect, the practice of one nation seeking riches and power by conquering, devastating, or obstructing the prosperity of another, must be *essentially futile:* being in opposition to the moral constitution of creation, it must occasion misery while in progress, and can lead only to the impoverishment and mortification of the people who pursue it. It is narrated that Themistocles told the Athenians that he had conceived a project which would be of the greatest advantage to Athens, but that the profoundest secrecy was necessary to ensure its success. They desired him to communicate it to Aristides, and promised, if he approved, to execute it. Themistocles took Aristides aside, and told him that he proposed, unawares, to burn the ships of the Spartans, then in profound peace with the Athenian state and not expecting an attack; which would very much weaken the Spartan power. Aristides reported that nothing could be more *advantageous*, but nothing more *unjust*, than the project in view. The people refused to hear or to execute it. Here the *intellect* of Aristides appears to have viewed the execution of the scheme as *beneficial*, while his sentiment of conscientiousness distinctly denounced it as *morally wrong;* and the question is, Whether nature is so constituted, that the intellect can, *in any case*, possess sufficient data for inferring actual benefit from conduct which is disowned and denounced by the moral sentiments. It appears to me that it cannot. Let us trace the project of Themistocles to its results.

The inhabitants of Sparta possessed the faculties of self-

esteem, combativeness, destructiveness, intellect, benevolence, and conscientiousness. The destruction of their ships, in time of profound peace, would have outraged their higher sentiments and intellect, and these would have kindled combativeness and destructiveness into the most intense activity. The greater the injustice of the act, the fiercer would the flame of opposition, retaliation, and revenge, have glowed; and not only so, but the more grossly and wantonly the moral sentiments were outraged by the act, the higher would have been the class of minds which would have instinctively burned with the desire of revenge, and the more powerful would they have been, by wealth, intelligence, and determination, to inflict it. The Athenians, then, by the very constitution of nature, would have been assailed by this fearful storm of moral indignation and animal resentment, rendered doubly terrible by the most virtuous and intelligent being converted into the most determined of their opponents.

Turning to their own state, again: only those individuals among themselves in whom intellect and moral sentiment were inferior to acquisitiveness and self-esteem, which give rise to selfishness and the lust of power, could have cordially approved of the deed. The virtuous would have turned from the contemplation of it with shame and sorrow; and thus both the character and number of the defenders would have been diminished in the very ratio of the atrocity of the crime, while the power of the assailants, as we have seen, would, by the very circumstance, have been proportionally increased. It was impossible, therefore, that permanent advantage to Athens could have resulted from such a flagrant act of iniquity; and the apparent opposition, in the judgment of Aristides, between the justice of the deed and the benefits to be expected from it, arose from his intellect not being sufficiently profound and comprehensive to grasp the whole springs which the enterprise would set in motion, and to trace out the ultimate results. In point of fact, there would have been no opposition between the dictates of conscientiousness, and those of an intellect that could accurately

survey the whole causes and effects which the unjust enterprise would involve; and the Athenians, in listening to the suggestions of the moral sentiments, actually followed the most advantageous course which it was possible for them to pursue. The trite observation, that honesty is the best policy, thus becomes a profound philosophical maxim, when traced to its foundation in the constitution of human nature.

If the Creator has constituted the world in harmony with the dictates of the moral sentiments, the highest prosperity of each particular nation should be thoroughly compatible with that of every other. Hence England, by sedulously cultivating her own soil, pursuing her own courses of industry, and regulating her internal institutions and external relations by the principles of benevolence, veneration, and justice, which imply abstinence from wars of aggression, from conquest, and from all selfish designs of commercial monopoly,—should be able to attain to the highest condition of prosperity and enjoyment that nature admits of; and every act in which she deviates from these principles, should carry inevitable evil to herself along with it. The same statement may be made with respect to France and every other nation. According to this principle, also, the Creator should have conferred on each nation such peculiar advantages of soil, climate, situation, or genius, as should enable it to produce something which other states want, and thus to carry on amicable intercourse with them in a beneficial exchange of the products peculiar to each; so that the higher one nation rose in morality, intelligence, and riches, the more estimable and valuable it should become as a neighbour to all the surrounding states. This is so obviously the real constitution of nature, that proof of it would be superfluous.

England, however, as a nation, long set this law at defiance. She led the way in taking the propensities as her guides, in founding her laws and institutions upon them, and in following them in her practical conduct. England placed restrictions on trade, and carried them to the greatest height; she conquered colonies, and ruled them in the full spirit of

selfishness; she encouraged lotteries, fostered the slave-trade, and carried paper-money and the most avaricious spirit of manufacturing and speculating in commerce to their highest pitch; she defended corruption in Parliament, and distributed churches and seats on the bench of justice on principles purely selfish; all in direct opposition to the supremacy of the moral law. If the world had been created in harmony with the predominance of the animal faculties, England would have been a most felicitous nation; but as the reverse is the case, it was natural that a severe national retribution should follow these departures from the Divine institutions—and grievous accordingly has been, and I fear will be, the punishment.

My conviction, therefore, is, that nations as well as individuals are placed under the moral law, and that the world is constituted in harmony with that law. As already remarked, wealth, the great object of national as well as individual pursuit, can be *produced* only by *industry*, and *accumulated* only by the practice of *economy*. This law of nature is as certain and unbending as that of gravitation. If the rulers of a nation, blind to this fact, attempt to fill their own coffers by imposing on their subjects taxes and fiscal restrictions, which sap the foundations of industry and disappoint the calculations of prudence, they will defeat the object they pursue. If, coveting the wealth of a neighbouring state, they expend the accumulated savings of the industry of their subjects in wars of aggression, they will sacrifice the treasure which they already possess, and follow an impracticable method of acquiring more. If they fight for power, they will waste their own strength in vain, if their enemy is strong;—if he is weak and easily overcome, they will immolate their own morality, and with it their security and prosperity, in robbing and oppressing him. In short, after doing their best to acquire riches and dominion, to spread prosperity and enjoyment around their own hearths, by an immoral course of action, they will discover that all their attempts have ended in vanity and vexation of spirit. They

will be compelled to resort to the natural fountains of wealth, —industry and economy,—or to submit to that ruin which is inevitably connected with perseverance in injustice and aggression. This law of nature admits of no exception. England owes her wealth and power to her steam-impelled machinery, her cultivated fields, and her economy, and not to her conquests and subject colonies.

The history of Rome is instructive on this subject. The Romans despised industry, and followed war and spoliation as their employments. Accordingly, at no period of their history did they present the spectacle of a moral, happy, and industrious people. Generally speaking, the nobles were sunk in luxury and vice. They became the instruments of public rapacity, and the victims alternately of ferocious mobs and of frantic tyrants. Under the empire, the Roman plebeians were idle, ignorant, turbulent, and barbarous paupers, —fed from the receptacles of public plunder, and ever ready to sell themselves and their country to the highest bidder. There were, indeed, some periods of tranquillity, and of comparative virtue, but these occurred exclusively under the sway of able and *moral* rulers. There also appeared, from time to time, individuals whose integrity, patriotism, and high intellectual attainments shed a lustre on their country's annals; but they also were moral. The general course of action, however, of the Romans was immoral. Their abandonment of virtuous, intellectual, and industrial pursuits, and their reliance on spoliation for subsistence, in the course of time enervated both the minds and the bodies of the people, rendering them incapable of self-restraint, of social combination, and of vigorous action; while their cruel oppressions fostered a spirit of deadly hatred against them in surrounding nations. At length the cup of their iniquity was full; and the injured, uncorrupted, and comparatively virtuous barbarians, burst upon them like a torrent of destruction, annihilated their empire, and extinguished their name.*

* In November 1843 I visited the Forum and Coliseum in Rome, and saw the broken pillars, the ancient pavement, the three triumphal

Moreover, the condition of animal supremacy, which leads to foreign aggression and its attendant crimes, is necessarily the parent of immoral and injurious action at home. The same fountain cannot give forth both bitter and sweet waters at the same time.

England, under the impulses of strong acquisitiveness, self-esteem, and destructiveness, for a long time protected the slave-trade. During the periods of her greatest sin in this respect, the same combination of faculties which perpetrated this outrage on humanity was working vigorously in her own institutions, and producing punishment for that offence. A general spirit of domineering and rapacity appeared in her statesmen, rendering them profligate in their public characters, and little mindful of the welfare of the people. A spirit of aggression and hostility towards other nations provoked retaliation; while injustice in taxation, and an oppressive harshness in the administration of the law, formed striking features of the history of that period. While these measures of injustice were publicly patronised by the Government, its servants vied with each other in injustice towards it, and its subjects dedicated their talents and enterprise towards corrupting its officers, and cheating it of its dues. Every trader who was liable to excise or custom duties evaded the one-half of them, and did not feel that there was any disgrace in doing so. A gentleman who was subject to the excise-laws in the earlier half of the reign of George III., described to me the condition of his trade at that time. The excise-officers, he said, regarded it as an understood matter that at least one-half of the goods manufactured were to pass without being charged with duty; but

arches of Constantine, Titus, and Septimius Severus, the palace of the Cæsars, and other ruined remains of Roman grandeur. I felt a solemn satisfaction in seeing the power of the propensities, of which these are the mouldering monuments, thus humbled in the dust, and eloquently proclaiming to the world that no dominion that is based on evil can permanently endure. Rome was subverted by the same powers by which she conquered—animal propensity directed by vigorous intellect.

then, said he, "they made us pay a moral and pecuniary penalty that was at once galling and debasing. We were constrained to ask them to our table at all meals, and place them at the head of it in our holiday parties: when they fell into debt, we were obliged to help them out of it; when they moved from one house to another, our servants and carts were in requisition to transport their effects. By way of keeping up discipline upon us, and also to make a show of duty, they chose every now and then to step in and detect us in a fraud, and had us fined. If we submitted quietly, they told us that they would make us amends by winking at another fraud, and they generally did so; but if our indignation rendered passive obedience impossible, and we gave utterance to our opinion of their character and conduct, they enforced the law on *us*, while they relaxed it on our neighbours; and these, being rivals in trade, undersold us in the market, carried away our customers, and ruined our business. Nor did the bondage end here. We could not smuggle without the aid of our servants; and as they could, on occasion of any offence given to themselves, carry information to the head-quarters of excise, we were slaves to them also, and were obliged tamely to submit to a degree of drunkenness and insolence that appears to me now perfectly intolerable. And, after all, this evasion and oppression did us no good; for all the trade were alike, and we just sold our goods so much the cheaper the more duty we evaded: so that our individual success did not depend on superior skill and superior morality, on making an excellent article at a moderate price, but on superior capacity for fraud, meanness, sycophancy, and every possible baseness. Our lives were anything but enviable. Conscience, although greatly blunted by practices that were universal and viewed as inevitable, still whispered that they were wrong; our self-respect very frequently revolted at the insults to which we were exposed; and there was a constant feeling of insecurity arising from our dependence upon wretches whom we internally despised. When the Government took a higher

tone, and employed greater strictness in the collection of the revenues, we thought ourselves ruined. The reverse, however, has been the case. The duties, no doubt, are now excessively burdensome from their amount; but that is their least evil. Were it possible to collect them from every trader with perfect equality, our independence would be complete, and our competition would be confined to superiority in morality and skill. Matters are much nearer this point now than they were; but still they would admit of considerable improvement." The same person mentioned, that, in his youth, the civil liberty of the people of Scotland was held by a weak tenure. About 1760, he knew instances of soldiers being sent, in time of war, to the farm-houses, to carry off, by force, young men for the army; and this was actually conformable to law. It was not till the year 1780 that the statutes legalising these inroads on the freedom of the people were repealed.

If the same minute representation were given of other departments of private life, during the time of the greatest immoralities on the part of the Government, we should find that such paltering with conscience and character in the national proceedings tended to check industry, civilisation, and morality in the people, fostered in them a rapacious spirit, blinded them to the necessity of benevolence and justice as the means of reaching public prosperity, and eventually led to many of the evils that have since overtaken them.

But we may take a more extensive view of the subject.

In the American war, Britain desired to gratify her acquisitiveness and self-esteem, in opposition to benevolence and justice, at the expense of her transatlantic colonies. This roused the animal resentment of the latter, and the propensities of the two nations came into collision. Britain fought to support a dominion incompatible with the principles which regulate the moral government of the world, and in expectation of becoming rich and powerful by success in that enterprise; the Americans, on the other hand, striving to as-

sert the supremacy of the higher sentiments, and to become free and independent. According to the principles which I am now illustrating, the greatest misfortune that could have befallen Britain would have been success—and the greatest advantage, failure in her attempt; and the result is now acknowledged to be in exact accordance with this view. If Britain had subdued her colonies in the American war, she would have ruled them as conquered slaves. This, in the first place, would have roused the animal faculties of the conquered party, and have led them to give her all the annoyance in their power; and the expense of the fleets and armies requisite to repress that spirit would have far counterbalanced the profits she could have wrung out of dissatisfied subjects by extortion and oppression. In the second place, the very exercise of these lower faculties by herself, in opposition to the moral sentiments, would have rendered her government at home destructive of her own welfare. The same malevolent principles would have overflowed on her own subjects: the Government would have felt uneasy, and the people rebellious, discontented, and unhappy; and the moral law would have been amply vindicated by the suffering which would have everywhere abounded. The consequences of her failure have been the reverse. America has sprung up into a great and moral nation, and contributes ten times more to the wealth of Britain, in her natural character of a friend, than she ever could have done in that of a discontented and oppressed colony. This advantage is reaped without any loss, anxiety, or expense; it flows from the Divine institutions, and both nations profit by and rejoice under it. The moral and intellectual rivalry of America, instead of prolonging the ascendency of the propensities in Britain, tends strongly to excite the moral sentiments in her people and Government; and every day that we live we are reaping the benefits of this improvement, in wiser institutions, deliverance from abuses, and a higher and purer spirit pervading every department of the executive administration of the country. Britain, however, did not escape the penalty of

her attempt to infringe the moral laws. The pages of her history during the American war are dark with suffering and gloom, and to this day we groan under the debt and difficulties then partly incurred.

The national debt of Britain has been contracted chiefly in wars, originating in commercial jealousy and thirst for conquest; in short, under the suggestions of combativeness, destructiveness, acquisitiveness, and self-esteem.* Did not our ancestors, then, impede their own prosperity and happiness, by engaging in these conquests? and have any consequences of them reached us, except the burden of paying nearly thirty millions of taxes annually, as the price of the gratification of their propensities? Would a statesman who believed in the supremacy of the moral sentiments and intellect have recommended these wars *as essential to national prosperity?* If the twentieth part of the sums had been spent in effecting objects recognised by the moral sentiments—in instituting, for example, seminaries of education and penitentiaries, and in making roads, canals, rail-

* Of 127 years, terminating in 1815, England spent 65 in war and 62 in peace. The war of 1688, after lasting nine years, and raising our expenditure in that period 36 millions, was ended by the treaty of Ryswick in 1697. Then came the war of the Spanish succession, which began in 1702, concluded in 1713, and absorbed 62½ millions of our money. Next was the Spanish war of 1739, settled finally at Aix-la-Chapelle in 1748, after costing us nearly 54 millions. Then came the seven years' war of 1756, which terminated with the treaty of Paris in 1763, and in course of which we spent 112 millions. The next was the American war of 1775, which lasted eight years. Our national expenditure in this war was 136 millions. The French revolutionary war began in 1793, lasted nine years, and exhibited an expenditure of 464 millions. The war against Buonaparte began in 1803, and ended in 1815; during these twelve years we spent 1159 millions, 771 of which were raised by taxes, and 388 by loans. In the revolutionary war we borrowed 201 millions; in the American, 104 millions; in the seven years' war, 60 millions; in the Spanish war of 1739, 29 millions; in the war of the Spanish succession, 32½ millions; in the war of 1688, 20 millions;—total borrowed in the seven wars during 65 years, about 834 millions. In the same time, we raised by taxes 1189 millions; thus forming a total expenditure on war of TWO THOUSAND AND TWENTY-THREE MILLIONS OF POUNDS STERLING.—*Weekly Review.*

ways, and public parks—how different would have been the present condition of the country!

After the American war followed that of the French Revolution. Opinions are at present more divided upon this subject; but my view of it is the following. When the French Revolution broke out, the domestic institutions of Britain were, to a considerable extent, founded and administered on principles in opposition to the supremacy of the moral sentiments. A clamour was raised by the nation for reform of abuses. If the principle be sound, that every departure from the moral law, in nations as well as individuals, carries its punishment with it, from the hour of its commencement till its final cessation; and if the institutions of Britain were then to any extent corrupt and defective, she could not have done better than have abandoned them, and adopted purer arrangements. Her Government, however, clung to the suggestions of the propensities, and resisted every innovation. To divert the national mind from causing a revolution at home, they embarked in a war abroad, and for a period of twenty-three years let loose the propensities on France with headstrong fury and a fearful perseverance. France, no doubt, threatened the differerent nations of Europe with violent interference with their governments; a menace wholly unjustifiable, and one which called for resistance. But the rulers of that country were preparing their own destruction, in proportion to their departure from the moral law; and a statesman who knew and had confidence in the constitution of the moral world as now explained, would have listened to her threats with composure, prepared to repel actual aggression, and left the exploding of French infatuation to the Ruler of the Universe, in unhesitating reliance on the efficacy of His laws. Britain preferred a war of aggression. If this conduct was in accordance with the dictates of the higher sentiments, we should now be reaping the reward of our obedience to the moral law, and plenty and rejoicing should flow down our streets like a stream. But mark the contrast. This island

exhibits the spectacle of millions of men toiling to the extremity of human endurance, for a pittance scarcely sufficient to sustain life; weavers labouring for fourteen or sixteen hours a-day for eightpence, and frequently unable to procure work even on these terms; other artisans exhausted almost to death by laborious drudgery, and who, if better recompensed, seek compensation and enjoyment in the grossest sensual debauchery, drunkenness, and gluttony; master-traders and manufacturers anxiously labouring for wealth, now gay in the fond hope that all their expectations will be realized, then sunk in despair by the ploughshare of ruin having passed over them; landholders and tenants now reaping unmeasured returns from their properties, then pining in penury amidst an overflow of every species of produce; the Government cramped by an overwhelming debt and the prevalence of ignorance and selfishness on every side, so that it is impossible for it to follow with a bold step the most obvious dictates of expediency and justice, by reason of the countless prejudices and imaginary interests which everywhere obstruct the path of improvement. This much more resembles punishment for transgression than reward for obedience to the Divine laws. It has all flowed as the natural and inevitable consequence of neglecting the moral culture and elevation of our labouring population, of pursuing wealth irrespective of the laws by which its creation and distribution are regulated, and of inattention to the order of Providence in the natural constitution of the world.

If every man in Britain will turn his attention inwards, and reckon the pangs of disappointment which he has felt at the subversion of his darling schemes by unexpected turns of public events, or the deep inroads on his happiness which such misfortunes, overtaking his dearest relations and friends, have occasioned to him; the numberless little enjoyments in domestic life, which he is forced to deny himself in consequence of the taxation with which he is loaded; the obstructions to the fair exercise of his industry and talents,

presented by stamps, licenses, excise-laws, customhouse duties, *et hoc genus omne;* he will discover the extent of suffering attached by the Creator to national transgressions. From my own observation I should say, that the miseries inflicted upon individuals and families, by fiscal prosecutions founded on excise-laws, stamp-laws, post-office laws, &c., all originating in the necessity of providing for the national debt, are equal to those arising from some of the most extensive natural calamities. It is true that few persons are prosecuted without having offended; but the evil consists in presenting men with enormous temptations to infringe mere financial regulations, not always in accordance with natural morality, and then inflicting ruinous penalties for transgression. Men have hitherto expected the punishment of their offences in the thunderbolt or the yawning earthquake, and have believed that because the sea did not swallow them up, or the mountains fall upon them and crush them to atoms, Heaven was taking no cognizance of their sins; while, in point of fact, an omnipotent, all-just, and all-wise GOD had arranged before they erred, an ample retribution in the very consequences of their transgressions. It is by looking to the *principles* in the mind, from which transgressions flow, and attending to their operations and results, that we discover the real mode of action of the Divine government. When men shall be instructed in the laws of creation, they will discriminate more accurately than heretofore between natural and factitious evils, and become less tolerant of the latter.

Since the foregoing observations were written in 1826, the great measure of Parliamentary Reform has been carried into effect in Britain and Ireland, and already considerable progress has been made in rectifying our national institutions. For the first time in the annals of the world, a nation has voluntarily contributed a large sum of money for the advancement of pure benevolence and justice. We have agreed to pay twenty millions sterling for the freedom of

800,000 human beings, whom our forefathers had led into hopeless slavery. Free trade has been established. Sinecures have been abolished, monopolies destroyed, entails relaxed, unmerited pensions checked, and taxation lightened; and there is a spirit abroad which demands the reform of all other abuses in church and state. There is also a strong and growing desire for an efficient system of national education. These and similar changes tend to bring the institutions of the country into harmony with the dictates of reason and the moral sentiments; the effect of which will infallibly be, not only to increase the physical enjoyments, but greatly to advance the moral, intellectual, and religious condition of the people. Example is the most powerful instructor, and in vain did a priesthood allied to the state preach truth, justice, and benevolence to the people, while selfishness, oppression, and profligacy were practised by their masters and themselves. No more effectual means of improving the morals of the people can be devised, than that of purifying all public institutions, and exhibiting justice and kindly affection as the animating motives of public men and national measures.

Of all national enormities, that of legalising the purchase of human beings, and conducting them into slavery, is probably the most atrocious and disgraceful; and Britain was long chargeable with this iniquity. The callous inhumanity, the intense selfishness, and the utter disregard of justice implied in the practice, must have overflowed in numerous evils on the people of Britain themselves. Indeed, the state of wretched destitution in which the Irish peasantry were allowed to remain, and the unheeded increase of ignorance, poverty, and toil, in the manufacturing districts, were the natural and legitimate fruits of the same spirit which patronised slavery; and these were preparing punishments for the nation, when, at length, repentance appeared. Slavery has been abolished by Great Britain, and I hail this as the first step in a glorious career of moral legislation. The North Americans, however, have been left behind by England, in

the practice of Christian principle. In the United States, negro slavery continues to deface the moral brightness of her legislative page; and on no subject does prejudice appear to be so inveterately powerful in that country as on slavery. Greatly as I respect the character of the Americans, it is impossible to approve of their treatment of the negro population. The ancestors of the present American people stole, or acquired by an unprincipled purchase, the ancestors of the existing negroes, and doomed them to a degrading bondage. This act was utterly at variance with the dictates of the moral sentiments, and of Christianity. Their posterity have retained the blacks in thraldom, treated them with contumely, and at this day regard them as scarcely human beings. This also is a grievous transgression of the moral law. Evil and suffering must flow from these transgressions to the American people themselves, if a just God really governs the world.

The argument that the negroes are incapable of civilisation and freedom is prematurely urged, and not relevant although it were based upon fact. The negro head presents great varieties of moral and intellectual development, and I have seen several which appeared fully equal to the discharge of the ordinary duties of civilised men. But the race has never received justice from its European and American masters; and until its treatment shall have become moral, its capabilities cannot be fairly estimated, and the judgment against it is therefore premature.* But, whatever be the capabilities

* In Chambers's Edinburgh Journal for Dec. 15, 1832, there is a very interesting account of a negro of high moral and intellectual qualities, who lived for a considerable time near Hawick. Another negro, named Eustache, of whose head there is a cast in the Phrenological Museum of Edinburgh, displayed a degree of shrewdness and disinterested benevolence very rare even in Europe; and his head, while it presents an excellent anterior development, is more prominent at the organ of benevolence than any other head which I have seen. An account of this negro will be found in the Phrenological Journal, vol. ix. p. 134, and in the Journal de la Société Phrenologique de Paris for April 1835. Mr Lawrence has collected, in the eighth chapter of his admirable Lectures on Physiology, Zoology, and the Natural History of Man, a great variety of facts tending to prove that

of the negroes, it was a heinous moral transgression to transport them, by violent means, from the region where they had been placed by a wise and benevolent God, and to plant them in a new soil, and amidst institutions for which they were never intended; and the punishment of this offence will rather be aggravated than averted by losing sight of the source of the transgression, and charging the consequences of it on the negroes, as if they were to blame for their alleged incapacity to glide gracefully into the ranks of American civilisation. They must either be improved by culture and intermarriage with the white race, or sent back to their native climate, before America can escape from the hands of Divine justice.

The alternative of incorporating the negroes, by intermarriage, with the white race, appears revolting to the feelings of the latter; while they also declare it to be impossible to transport the blacks to Africa, on account of their overwhelming numbers. There is much force in both of these objections, but the following considerations have still greater weight:—The white race is exclusively to blame for the origin of the evil, and for all its consequences; the natural laws never relax in their operation; and hence the existing evils will go on augmenting until a remedy be applied, and this will become more painful the longer it is delayed. If the present state of things shall be continued for a century, it is probable that it will end in a war of extermination between the black and the white population, or in an attempt by the blacks to conquer and exclusively possess

the negroes, though morally and intellectually inferior to the white race, are by no means near the bottom of the scale of humanity; and he expresses the well-grounded opinion, "that of the dark-coloured people none have distinguished themselves by stronger proofs of capacity for literary and scientific investigation, and, consequently, that none approach more nearly than the negro to the polished nations of the globe."

May 1, 1841.—Since the above was written, I have visited the United States of North America, and examined numerous skulls and heads of negroes, and can now confirm, from observation, the opinion of Mr Lawrence. See my Notes on the United States, vol. ii. pp. 77, 112, 292; and vol. iii. pp. 76, 168.

one or more of the southern states of the Union as an independent kingdom for themselves.

If the principles maintained in this treatise are sound, a less violent remedy may exist, which will also be effective. Free labour, because it is moral, should be found to be more advantageous than slave labour, not only to the labourer, but to the employer. If a just God governs the world, He cannot have left inconsistent elements in His scheme of administration; and in reliance on His attributes, we may venture to predict that free labour will vindicate its own superiority as an instrument of gain, and that the Americans will be found to be obstructing the natural avenues to prosperity, as well as to peace and security, by preferring oppression to mercy, and robbery to justice, as means of advancing their pecuniary interest. The first State that shall try this experiment in a right spirit, and after due preparation, will, apparently, have the guarantee of Providence for its success.

The Spaniards, under the influence of selfish rapacity and ambition, conquered South America, inflicted upon its wretched inhabitants the most atrocious cruelties, and continued, for 300 years, to weigh like a moral incubus upon that portion of the globe. In that conquest they set at nought the laws of religion and morality. They sought for wealth not from industry, but from war and plunder. This conduct fostered avarice and pride in the Government, baseness in the nobles, and indolence, ignorance, and mental depravity in the people; it led them to imagine happiness to consist, not in the exercise of the moral and intellectual powers, but in the gratification of all the inferior, to the outrage of the higher feelings. Intellectual cultivation was neglected, the sentiments ran astray into bigotry and superstition, and the propensities acquired a fearful ascendency. These causes made them the prey of internal discord and of foreign invaders, and Spain at this moment suffers an awful retribution.

Cowper recognised these principles of Divine government as to nations, and has embodied them in his powerful verses:—

" The hand that slew till it could slay no more,
Was glued to the sword-hilt with Indian gore.
Their prince, as justly seated on his throne
As vain imperial Philip on his own,
Trick'd out of all his royalty by art,
That stript him bare, and broke his honest heart,
Died by the sentence of a shaven priest,
For scorning what they taught him to detest.
How dark the veil that intercepts the blaze
Of Heaven's mysterious purposes and ways!
GOD stood not, though He seemed to stand, aloof;
And at this hour the conqueror feels the proof:
The wreath he won drew down an instant curse,—
The fretting plague is in the public purse;
The canker'd spoil corrodes the pining state,
Starved by that indolence their mines create.
Oh! could their ancient Incas rise again,
How would they take up Israel's taunting strain!
Art *thou* too fallen, Iberia! Do we see
The robber and the murd'rer weak as we?
Thou, that hast wasted earth, and dared despise
Alike the wrath and mercy of the skies,
Thy pomp is in the grave, thy glory laid
Low in the pits thine avarice has made.
We come with joy from our eternal rest,
To see th' oppressor in his turn opprest.
Art *thou* the god, the thunder of whose hand
Rolled over all our desolated land,
Shook principalities and kingdoms down,
And made the mountains tremble at his frown?
The sword shall light upon thy boasted powers,
And waste them, as thy sword has wasted ours.
'Tis thus Omnipotence His law fulfils,
And Vengeance executes what Justice wills."— *Charity.*

The question has frequently been discussed, whether the civilisation of savages may be more easily effected by forcible or by peaceful measures. By one class of reasoners, including the late excellent Sir Thomas Stamford Raffles, it is contended that civilised nations may, in their endeavours to improve and enlighten savage tribes, employ with advan-

tage the superior power with which they are armed; but, on the principle of the supremacy of the moral sentiments, we are entitled to conclude, *à priori*, that such a method of proceeding would be found ineffectual. The employment of compulsion is calculated to rouse chiefly the propensities, while the very essence of civilisation is the predominance of the moral and intellectual powers.* This subject is ably handled by an acute anonymous writer in the Library of Entertaining Knowledge.† History, he remarks, does not warrant the opinion that any nation has ever been civilised by the sword; and the improvement which followed the Roman conquests appears to have been brought about, not by compulsion, but by the exhibition of "a standard and pattern of comfort and elegance which the barbarians could hardly fail first to admire, and afterwards to imitate." The Romans do not seem to have violently interfered with the established customs and institutions of conquered nations. "The inferior animals can only be reduced to obedience by constraint; but men are formed to be tamed by other methods. Example, persuasion, instruction, are the only means we may lawfully make use of to wean savages from their barbarism; and they are also the best fitted to accomplish that object. It is not even pretended that an exercise of what are falsely called the rights of conquest for such a purpose would have any chance of being successful till after the lapse of at least two or three generations;—till the conquered people in fact have become mixed and amalgamated with their conquerors, or, from not having been permitted to follow the customs of their ancestors, have actually forgotten them. In some cases the natives have been absolutely extirpated before this has happened, as was the case almost universally on the South American continent, and of which we have a more remarkable instance in the attempts of the Spanish Jesuits to christianize by main force the inhabitants

* See Observations on the Phrenological Standard of Civilisation, in the Phren. Jour., vol. ix. p. 360.

† The New Zealanders, pp. 402–410.

of the Marianas, which were terminated in a few years by the almost entire depopulation of that beautiful archipelago."*

In surveying the present aspect of Europe, we perceive astonishing improvements achieved in physical science. How much is implied in the mere names of the steam-engine, power-loom, rail-roads, steam-boats, canals, and gas-lights; and yet of how much misery are several of these inventions at present the direct sources, in consequence of being almost exclusively dedicated to the gratification of the propensities! The leading purpose to which the steam-engine in almost all its forms of application is devoted, is the accumulation of wealth; and, until a very recent date, few persons proposed to lessen, by its means, the hours of toil of the lower orders of society, so as to afford them opportunity and leisure for the cultivation of their moral and intellectual faculties, and thereby to enable them to render a more perfect obedience to the Creator's institutions. Physical has far outstripped moral science; and it appears to me, that, unless mankind shall have their eyes opened to the real constitution of the world, and be at length induced to regulate their conduct in harmony with the laws of the Creator, their future physical discoveries will tend only to deepen their wretchedness. Intellect, acting as the ministering servant of the propensities, will lead them only further astray. The science of Man's whole nature, animal, moral, and intellectual, was never more required to guide him than at present, when he seems to wield a giant's power, but in the application of it to display the ignorant selfishness, wilfulness, and absurdity of an overgrown child. History has not yielded half her fruits, and cannot yield them until Man shall possess a true theory of his own nature, and a religion in harmony with the order of Providence. England has still much to learn in this respect. Her conquest and dominion of India is immoral; and as God's laws can neither be abrogated nor

* "See the narrative of these extraordinary proceedings, though related by a pen in the interest of their authors, in Father Legobien's *Histoire des Iles Mariannes.*"

evaded, serious social evils must, at this moment, be flowing to herself from the immoral action, in her own social circles, of the selfish and domineering propensities which have prompted her to make and to retain that violent acquisition. At the same time, these conquests could not occur without weakness and immorality predominating in the subjected nation. Their fate is the consequence of their own low moral, intellectual, and physical condition; and apparently the scourge, even of foreign oppression, is intended to stimulate its victims to greater energy of action, or to sweep them away as encumberers of the soil. The first aim of Nature seems to be to develop strength, and to give the world to the energetic. Among moral beings, however, that strength must be regulated by morality, or they must suffer. The immoral may *possess*, but the natural law declares they shall not *enjoy*, the earth.

If I might hazard a conjecture in regard to India, I should hope, that before the close of another century, the public mind of Great Britain will have made so great a progress in the knowledge of, and belief in, the moral order of God's providence, that it will compel her rulers, either to relinquish that conquest as prejudicial equally to England and India, or to administer it on the principles of morality for the benefit of the Indian people themselves. It may be affirmed that this is already done, and that, under British sway, India is now more prosperous and happy than she ever was under her native princes. English testimony, however, is not competent to establish this proposition; and we have never heard it confirmed by the general voice of the conquered people. Besides, it is notorious that we rule India as a conquered nation, and deprive her people of all high places of honour and authority in the administration of their own affairs. A moral government of India would imply a thorough education of her people in the natural laws, and training them to reverence and obey them; the employment of them in the administration of their own government; placing them on a footing of equality, in

rights and rank, with the British; and preparing them to become a free, moral, and intellectual people. If we should ever bring them into this condition, and be contented to act towards them on the principles of beneficence and justice, we might withdraw our armies and enjoy all the profits of their commerce from the bonds of interest, respect, and affection, which such conduct would evoke.

These ideas will probably appear chimerical and utopian to most readers, but the other alternative is not fanciful. While the British public mind continues to disbelieve in God's moral government of the world, and to sanction the present system of domination in India, British institutions will never become thoroughly moral at home; and so long as they continue immoral, her religion will prove a rope of sand to bind her people to virtue; her wealth will be a snare, and her power will have a canker at its core that will eat out its strength, and add her empire to the list of those that have fallen by their defiance of God's moral providence, and their reliance on their own animal and intellectual superiority.*

Many persons believe that they discover evidence against the moral government of the world, in the success of men

* These remarks on India first appeared in the eighth edition, which was published in 1847. Ten years afterwards, when the great rebellion took place, the event was regarded by the Author as a strong confirmation of his views. In February 1858 he published in a little pamphlet, entitled *Our Rule in India*, a correspondence on this subject between himself and his friend Mr W. R. Young, author of *A Few Words on the Indian Question*, and who had for several years administered a district in India. Mr Combe's final letter concludes as follows:—"The natives of India never can love us or our yoke; because we are conquerors and foreigners. Let us not, therefore, force unacceptable peace and justice on them, which they do not prize at our hands. What we call peace and justice must appear to them oppression, because conquest poisons its source. Let us, then, restore order, and devise means to slip out of our conquered territories as soon as this can be advantageously accomplished."

In his work on *The Relation between Science and Religion*, chap. vii., he shows how heavy a retribution England has suffered, as the fruit of the oppressive manner in which she governed Ireland during several centuries.—Ed.

not highly gifted with moral and intellectual qualities who attain to great wealth, rank, and social consideration, while men of far superior merit remain in obscurity and poverty. But the solution of this difficulty is to be found in the consideration, that success in society depends on the possession, in an ample degree, of the qualities which society needs and appreciates, and that these bear reference to the state in which society finds itself at the time when the observation is made. In the savage and barbarous conditions, bodily strength, courage, fortitude, and skill in war, lead a man to the highest honours; in a society like that of modern England, commercial or manufacturing industry may crown an individual with riches, and great talents for debate may carry him to the summit of political ambition. In proportion as society advances in moral and intellectual acquirements, it will make larger demands for high qualities in its favourites. The reality of the moral government of the world is discernible in the different degrees of happiness which individuals and nations enjoy in these different states. If unprincipled commercial and political adventurers were happy in proportion to their apparent success; or if nations were as prosperous under the dominion of reckless warriors as under that of benevolent and enlightened rulers; or if the individuals who compose a nation enjoyed as much serenity and joy of mind when they advanced bold, selfish, and unprincipled men to places of trust and power, as when they chose the upright, benevolent, and pious, of equal intellectual attainments,—the dominion of a just Creator might well be doubted. But the facts are not so.

CHAPTER VI.

ON THE EVIL CONSEQUENCES CONNECTED WITH INFRINGEMENT OF THE NATURAL LAWS.

SECT. I.—ON SUFFERING AS INFLICTED UNDER THE NATURAL LAWS.

The next point connected with the Natural Laws, which I shall consider, is the principle on which suffering for infringement of them is inflicted in this world. To prevent misunderstanding of the sense in which I use the word *suffering* or *punishment*, I request the reader to bear in mind the observations made on this subject in the introductory chapter.*

Every law prescribed to intelligent beings presupposes a superior who establishes, and subjects who are called on to obey it. The superior may be supposed to act under the dictates of the animal faculties, or under those of the moral sentiments. The former being selfish, whatever they desire is for selfish gratification. Hence laws instituted by a superior inspired by the animal powers, would have for their leading object the individual advantage of the lawgiver, with no systematic regard to the enjoyment or welfare of his subjects. The moral sentiments, on the other hand, are altogether generous, disinterested, and just; they delight in the happiness of others, and do not seek individual advantage as their supreme end. Laws instituted by a lawgiver inspired by them, would have for their grand object the advantage and enjoyment of those who were required to yield obedience. The story of William Tell will illustrate my

* See page 27.

meaning. Gessler, an Austrian governor of the canton of Uri, placed his hat upon a pole, and required the Swiss peasants to pay the same honours to it that were due to himself. The object of this requisition was obviously the gratification of the Austrian's self-esteem, in witnessing the humiliation of the Swiss. It was framed without the least regard to their happiness; because such abject slavery could gratify no faculty in their minds, and ameliorate no principle of their nature, but, on the contrary, was calculated to outrage every feeling of self-respect.

Before punishment for breaking a law can be justly inflicted, it seems reasonable that the people called on to obey it should not only possess the power of doing so, but likewise be benefited by their obedience. It was certain, that, by the very constitution of their minds, it was impossible for the Swiss to reverence the hat of the tyrant; and if they had pretended to do so, they would have manifested only baseness and hypocrisy. The law requiring that respect was therefore unjust, and all punishment for disobedience was pure tyranny and oppression. In punishing the Swiss, the governor employed destructiveness as a means of procuring gratification to his own self-esteem.

Let us imagine, on the other hand, a law promulgated by a sovereign whose sole motive was the happiness of his subjects, and that the edict was, Thou shalt not steal. If the lawgiver were placed far above the reach of theft by his subjects, and if respect to each other's rights were indispensable to the welfare of his people themselves, then it is obvious that their stealing or not stealing would be of no importance whatever to him, while it would be of the highest moment to themselves. Let us suppose, then, that in order to prevent the evils which the subjects would bring upon themselves by stealing, he were to add as a penalty, that every man who stole should be locked up, and instructed in his duty until he became capable of abstaining from theft,—the justice and benevolence of this sentence would be unquestionable, because it would prove advantageous both to society

and to the offender. Suppose that the latter was born with large organs of acquisitiveness and secretiveness, and deficient conscientiousness, and that when he committed the offence he really could not help stealing—still there would be no cruelty and no injustice in locking him up, and instructing him in moral duty until he learned to abstain from theft; because, if this were not done, and if all men were to follow his example and steal, the human race, and he, as a member of it, would starve and become extinct.

The Creator's natural laws, so far as I have been able to perceive them, are instituted substantially on the latter principle; that is to say, there is no indication of the object of any of the arrangements of creation being to gratify an inferior feeling in the Creator himself. No well-constituted mind, indeed, could conceive Him commanding beings whom He called into existence, and whom He could annihilate in a moment, to do any act of homage which had reference merely to the acknowledgment of His authority, solely for His personal gratification, and without regard to their own welfare and enjoyment. We cannot, without absolute outrage to the moral sentiments and intellect, imagine His doing anything analogous to the act of the Swiss governor—placing an emblem of His authority on high, and requiring His creatures to obey it, merely to gratify Himself by their homage, to their own disparagement and distress. Accordingly, every natural law, so far as I can discover, appears instituted for the purpose of adding to the sum of enjoyment of the creatures who occupy the world. In regard to Man, the Divine pre-ordainment of certain agreeable consequences from obedience, and disagreeable consequences from infringement of the natural laws, appears to be designed for his instruction and guidance, as the moral and intellectual administrator of this world. That there are cases of suffering, in the lots both of the inferior animals and of Man, which still present formidable difficulties in the way of reconciling the order of creation with our notions of benevolence and justice, I am far from

denying; but I regard the human race as still only in the dawn of its existence, and am disposed to refer the present apparent anomalies to our imperfect knowledge, and not to real inconsistencies in the Divine arrangements.* One of the objects of the painful consequences attached to disobedience appears to be to arrest the offender in his departure from the laws; which departure, if permitted to proceed to its natural termination, would involve him in tenfold greater miseries. This arrangement greatly promotes the activity of the faculties; and active faculties being fountains of pleasure, the penalties themselves become benevolent and just. For example:—

Under one of the physical laws, all *organic* bodies are liable to combustion. Timber, coal, oils, and animal substances, when heated to a certain extent, catch fire and burn: and the question occurs, Is this quality, in so far as it affects Man, consistent with a benevolent purpose or not? Let us look at the advantages attending it. By means of fire we obtain warmth in cold latitudes, and light after sunset: it enables us to cook food, thereby rendering it more wholesome and savoury; and by fire we soften and fuse metals. I need not go further; every one will acknowledge that by the law under which organic bodies are liable to combustion, countless benefits are conferred on the human race.

But the human body itself is organised, and is subject to this law; so that, if placed in a great fire, it is utterly dissipated in a few minutes. The effect of a less degree of heat is to disorganise the texture of the body. What mode, then, has the Creator followed to preserve men from the danger to which they are subjected by fire? He has caused their nerves to communicate sensations from heat, agreeable while

* In the APPENDIX, No. X., will be found a letter on this subject, from a friend who has long been perplexed by the apparent anomalies in the order of nature, and who states them strongly, together with the best explanation which his own reflections have enabled him to reach. As other minds may have experienced similar difficulties, and as it injures the progress of truth to withhold the statement of such, I consider it proper to present this letter, and to allow it to speak for itself.

the temperature is such as to benefit the body; slightly uneasy when it becomes so high as to be in some measure hurtful; positively painful when the heat approaches that degree at which it would seriously injure the organised system; and horribly agonising whenever it becomes so elevated as to destroy the organs. The principle of all this is very obviously benevolent. Combustion bestows on us innumerable advantages; and when we place ourselves in *accordance* with the law intended to regulate our relation to it, we reap unmingled benefits and pleasure. But we are in danger from its excessive action; and so kind is the Creator, that he does not trust to the guardianship of our own cautiousness and intellect alone to protect us from infringement, but has established a monitor in every sentient nerve, whose admonitions increase in intensity through imperceptible gradations, exquisitely adjusted to the degrees of danger; till at last, in pressing circumstances, they urge in a voice so clamant as to excite the whole physical and mental energy of the victim to withdraw him from the impending destruction.

It may be argued, however, that although this mode of admonition would be unexceptionable if the offender always possessed the power to avoid incurring it, yet when a child or an aged person stumbles into the fire, through mere lack of bodily strength to keep out of it, it cannot be just and benevolent to visit him with the tortures that follow from burning. This, however, is a shortsighted objection. If, to remedy the evil supposed, the law of combustion were altogether suspended as to children and old men, so that, so far as they were concerned, fire did not exist, then they would be deprived of the light, warmth, and other benefits which it affords. This would be a fearful deprivation; for warmth is peculiarly grateful and necessary to them, in consequence of the very feebleness of their frames. Or we may suppose that their nerves were constituted to feel no pain from burning: this arrangement would no doubt effectually guarantee them against the tortures of falling into the fire;

but, in the first place, nerves feel pain under the same law that enables them to feel pleasure; and, secondly, if no pain were felt when in the fire, the child and old man would have no urgent motive to keep out of it. Under the present system, the pain would excite an intense desire to escape; it would increase their muscular energy, or make them cry aloud for assistance; in short, it would compel them to get out of the fire by some means or other, and thus if possible escape from death. As they fell into the fire in consequence of a deficiency of mental or bodily power to keep out of it, the conclusion is obvious, that if no pain attended their contact with the flames, they might repose there as contentedly as on a bed of down; and the fond mother might find a black cinder for her child, or a pious daughter a half-charred mass of bones for her father, although she had been only in an adjoining apartment, from which the slightest cry or groan would have brought her to arrest the calamity.

In this instance, then, the law under which pain accompanies combustion, is benevolent, even when it visits persons incapable of avoiding the infringement; because the object of the law is the welfare of these very unconscious sufferers themselves. If it were subverted, they would be greatly injured, and would have just cause to petition for its re-establishment.

Let us take another example. Opium, by its inherent qualities, and the relationship established by the Creator between it and the nervous system of Man, operates, if taken in one quantity, as a stimulant; if the quantity be increased, it becomes a sedative; and if still increased, it paralyzes the nervous system, and death ensues. Now, it is generally, admitted that there is no want of benevolence and justice when a full-grown and intelligent man loses his life, if, knowing the qualities of opium, he deliberately swallow an overdose of it. When, however, an ignorant child, groping about for something to eat and drink, in order to satisfy the craving of its natural curiosity and appetite, stumbles on a phial of laudanum, intended for the use of some sick relative,

pulls the cork, drinks, and dies,—many find it very difficult to discover justice and benevolence in this severe, and, as they say, unmerited catastrophe.

But the real view of the law under which both events happen appears to me to be this. The qualities of opium, and its relationship to the nervous system, are the sources of manifest advantages to man. If, in order to avoid every chance of accidents, opium, in so far as children are concerned, were deprived of its qualities, so that their nervous systems received no greater impression from it than from tepid water, it is clear that they would be sufferers. The greatest advantages of the drug are derived from its *scale of efficiency*, by which it can be made to produce, first a stimulating effect, then a gently sedative, and afterwards a higher and higher degree of sedative influence, until, by insensible degrees, absolute paralysis ensues. If its range were limited to effects beneficial in health, its advantages in disease, arising from higher action, would necessarily be lost—so that children, by the supposed arrangement, would be cut off from its beneficial administration. The parallel between it and the law of combustion is evident. If we could never have commanded a degree of heat greater than that which gently warms the human body, we must have gone without all the advantages now derivable from intense heats used in cooking, baking, and manufacturing; if we could never have commanded more than the gently stimulant and sedative effects of opium on the body in a state of health, we should necessarily have been deprived of its powerful remedial action in cases of disease. The proper question then is, Whether is it more benevolent and just that children, after they have been exposed, from whatever cause, to that high degree of its influence, which, although beneficial in disease, is adverse to the healthy action of the nervous system, should be preserved alive in this miserable condition, or that life should at once be terminated? It appears advantageous to the offender himself, that death should relieve him from the unhappy state into which his organised frame has been

brought by the abuse of this substance, calculated, when discreetly used, to confer on him no mean advantages.

The principle that the painful consequences attached by Divine ordination to infringement of the natural laws are founded in benevolence, even to the sufferer, is strongly elucidated in the case of the organic laws. When inflammation, for example, has seized any vital organ, if there were no pain there would be no intimation that an organic law had been infringed; the disease would proceed quietly in its invasions, and death would ensue without previous warning. The pain attending an acute disease warns the sufferer, by the most forcible of all admonitions, to return to obedience to the law which he has infringed. In the case of a broken limb, or a deep cut, the principle is very obvious. The bone of a leg will reunite, if the broken edges be preserved in contact; and the subsequent serviceable condition of the limb will depend on the degree of exactness with which they have been made to reapproach, and been preserved in their natural position. Now, in the first place, the pain attending a broken limb gives a most peremptory intimation that an injury has been sustained; secondly, it excites the patient most forcibly to do what is needful for its reparation; and, thirdly, after the healing process has commenced, it recurs with a degree of violence proportioned to the disturbance of the parts, and thus acts like a sentinel with a drawn sword, compelling the sufferer to avoid everything that may impede his recovery. The same observations apply to a flesh-wound. The pain serves to intimate the injury, and to excite the patient to have it removed. The dissevered edges of the skin, nerves, and muscles, when skilfully made to reapproach, will, by the organic law, reunite if left in repose. As an accession of pain follows every disturbance of their condition when in the process of healing, it serves as an effectual guardian of the welfare of the individual. If these views be correct, who would dispense with the pain which attends the infringement of the organic laws, although such a boon were offered for his acceptance? If he possessed the

least glimmering of understanding, he would thank the Creator for the institution, and beg to be allowed the benefits attending it; especially if he considered that after the possibility of recovery ceases, death steps in to terminate the suffering.

The point to which I request the reader's special attention is, that the power of the individual to avoid or not to avoid the infringement of the law in the particular instance which brings the painful consequences, is not an indispensable circumstance in rendering the infliction benevolent and just. The infliction is approved of by the moral sentiments and intellect, because the law, in its legitimate operation, is calculated for the advantage of the subject; and because the suffering has for its object *to bring him back to obedience for his own welfare, or to terminate his sufferings when he has erred too widely to return.*

Let us now inquire whether the same principle prevails in regard to the infringement of the Moral and Intellectual Laws. This investigation is attended with great difficulty; and it may be best elucidated by attending, in the first place, to the liability of the lower animals to suffer for their actions.

The physical and organic laws affect the inferior creatures in the same manner as they do Man, so that nothing need be said on these points. The animals are endowed with propensities impelling them to act, and a certain degree of intellect enabling them to perceive the consequences of their actions. These faculties prompt them to inflict punishment on each other for infringement of their rights, although they possess no sentiments pointing out the moral guilt of such conduct. For example, dogs possess acquisitiveness, which gives them the sense of property: when one is in possession of a bone, and another attempts to steal it, this act instantly excites the combativeness and destructiveness of the proprietor of the bone, and he proceeds to worry the assailant. Or a cock on a dunghill finds a rival intruding on his domain, and under the instinctive inspiration of combativeness and offended self-esteem, he attacks him and drives

him off. I call this inflicting suffering under the impulse of animal resentment. In these cases it is not supposed that the aggressors possess moral faculties, intimating that the trespass is wrong, or free will by which they could avoid it. I view them as inspired by their propensities, and rushing blindly to gratification. Nevertheless, in the effect which the aggression produces on the propensities of the animal assailed, we perceive an arrangement instituted by the Creator for checking outrage, and arresting its progress; —in short, for executing substantial justice, without consciousness of this design on the part of those who bring it about.

Before the penalty inflicted could be viewed by Man as just in such cases, it would be necessary to perceive that it was instituted for the benefit of the aggressors themselves; and, in truth, this is the case. If all dogs neglected to seek bones, and dedicated themselves solely to stealing; and if cocks, in general, deserted their own domains, and gave themselves up only to felonious inroads on each other's territories, it is evident that the races of these animals would soon become extinct. It follows, also, that when the race perished, every individual would lose his life. If, then, it is beneficial for the race, and also for the individual offender himself, in these instances, to be arrested in his progress, his chastisement is benevolent and just.

It is interesting to observe, that various provisions, which do not strike us without reflection, have been made, under the animal law, for bringing about substantial justice. The lower animals make perfectly sure of punishing only the real offender; for he must be caught in the act, otherwise he is not visited by their resentment. In the next place, it appears to be the general law of animal nature, that unless the offender has carried his inroad to an extreme extent, the punishment is relaxed the moment he desists; that is to say, the master of the bone or dunghill is generally satisfied with simple defence, and rarely abandons his treasure to pursue the offender for the sake of revenge.

Further, the animals, in inflicting punishment make no inquiry into the *cause of the offence.* With them it affords no alleviation that the aggressor is himself in a state of the greatest destitution, or that his appetite is irresistible; neither do they concern themselves about his fate after they have made him undergo the penalty. He may die of the wounds they have inflicted upon him, or of absolute starvation, before their eyes, without their enjoyment being in the least disturbed. This arises from their faculties consisting entirely of those propensities which regard only self. They are deficient in the faculties which trace causes and consequences; and in the moral sentiments, which desire, with a disinterested affection, the welfare of other beings.

Nevertheless, the punishment which they inflict is in itself just, and serves, as we have seen, a beneficial end. Let us now direct our attention to Man.

Man possesses animal propensities similar to those of the lower creatures, and, under their instigation, he too inflicts punishment on principles analogous to those under which they chastise. Indeed, it is curious to remark, that, until a very recent date, the criminal laws, even of civilised nations, have been framed on the principles of animal resentment almost exclusively. A thief, for example, breaks into a dwelling-house and steals. The reflecting faculties are employed to discover the offender, and evidence of the offence. Judges and juries assemble to determine whether an offence has been committed, and whether the evidence against the accused is sufficient; and if they find them to be so, the offender is ordered to be imprisoned, banished, or hanged. We are apt to imagine that there is something moral in the trial; but the sole object of it is to ascertain that a crime has been committed, and that the accused is the offender. The dog and cock make equally sure of both points; because they never punish except when the individual is caught in the offence. Guilt being ascertained, and the offender identified, the dog worries him, and then lets him go; while Man scourges his back, or makes him mount the steps of a

treadmill, and then turns him adrift. If the offender has been very presumptuous and pertinacious in his aggression, the dog sometimes, although rarely, throttles him outright; and Man, in similar circumstances, generally strangles him with a rope, or cuts off his head. The dog, in his proceeding, makes no inquiry into the causes which led to the crime, or into the consequences upon the offender of the punishment which he inflicts. In this also he is imitated by the human race. Man inflicts his vengeance with as little inquiry into the causes which led to the offence,—and, except when the sentence is capital, he turns the culprit adrift upon the world after he has undergone his punishment, with as little concern about what shall next befall him as is shown by the canine prototype. The dog acts in this manner, because he is inspired by animal propensities, and higher faculties have been denied him. Man does so, because he too has received animal faculties, and because, although he possesses, in addition to them, moral sentiments and reflecting intellect, he has not yet discovered the practical application of these to the subject of criminal legislation.

The animal punishment is not without advantage even in the case of Man, although it falls far short, in this respect, of what he might obtain by following the guidance of his moral sentiments and enlightened intellect. Man as a mere animal could not exist in society, unless some check were instituted against abuses of the propensities; and hence, animal vengeance, rude as it is, carries with it results beneficial even to the offender, except where it puts him to death —a degree of punishment which, as we have seen, the lower animals rarely inflict on each other of the same species. Unless the abuses of the animal propensities were checked, human society would be dissolved, and by that result the offenders themselves would suffer more grievous calamities than under any moderate form of animal castigation.

In so far as regards the lower creatures, the world is arranged with a wise relation to the faculties bestowed on them. Accordingly, animal resentment is really effective

in their case. In consequence of their not possessing reflecting faculties, they are incapable of forming deep or extensive schemes for combined aggression, and are not led to speculate on the chances of escaping detection in their misdeeds. Their offences are limited to casual overflowings of their propensities, when excited by momentary temptation; which are checked by counter-overflowings of other propensities, momentarily excited in the animals aggrieved.

In regard to Man, however, the world has been arranged on the principle of supremacy of the moral sentiments and intellect; and, in consequence, animal retribution is not equally effectual in his case. A human offender employs his intellect in devising means to escape detection, or to defend himself against punishment; and hence, although he sees penal infliction staring him in the face, his hope deludes him into the belief that he may escape it. Further, if the real cause of human offences be excessive size and activity of the organs of the animal propensities, it follows that mere punishment cannot put a stop to crime; because it *overlooks the cause, and leaves it to operate with unabated energy after the infliction has been endured.* The history of the world, accordingly, presents us with a succession of crimes and punishments, and at present the series appears to be as far removed from a termination as at any previous period in the annals of the race.

If the world, in regard to Man, has been arranged on the principle of supremacy of the moral sentiments and intellect, we might expect better success were *moral retribution*, of which I now proceed to treat, resorted to.

The motive which prompts the dog to worry, and the cock to peck and spur his assailant, is, as I have said, mere animal resentment. His propensities are disagreeably affected, and combativeness and destructiveness instinctively start into activity to repel the aggression. The animal resentment of Man is precisely analogous. A thief is odious to acquisitiveness, because he robs it of its treasures; a murderer is offensive to our feelings, because he extinguishes life. And these faculties being offended, combativeness and

destructiveness rush to their aid in Man while under the animal dominion, as instinctively as in the dog,—and punish the offender on principles, and in a way, exactly similar.

The case is different with the proper human faculties. Benevolence contemplating theft and murder, disapproves of them, because they are hostile to its inherent constitution, and because they occasion calamities to those who are its objects, and misery to the perpetrators themselves. Conscientiousness is pained by such deeds, because its very nature revolts at every infringement of right, and because justice is essential to the welfare of mankind. Veneration is offended at reckless insult and indignity, because its desire is to respect the intelligent creatures of the God whom it adores, believing that they are all the objects of His love. In short, all the moral sentiments ardently and instinctively desire that crime should be brought to a close, and its recurrence be prevented, because it is in direct opposition to their very nature. And this desire, on their part, *is not dependent on the power of the criminal to offend or to forbear.* Benevolence grieves at death inflicted by a madman, and calls aloud that it should be prevented; conscientiousness disavows theft, although committed by an idiot, and requires that he should be restrained; while veneration recoils at the irreverences even of the frenzied. The fact that the offenders are involuntary agents, incapable of restraining their propensities, does not alter the aversion of the moral faculties to their actions. The reasons of this are obvious. *First*, these faculties hate evil because it is contrary to their nature, from whatever source it springs; and, *secondly*, the circumstance of the aggressor being a necessary agent does not diminish the calamity inflicted on the sufferer. It is as painful to be killed by a madman as by a deliberate assassin; and it is as destructive to property to be robbed by a cunning idiot as by an acute and practised thief.

We perceive, therefore, as the first feature of the moral and intellectual law, that the higher sentiments, absolutely

and in all circumstances, declare against offences, and demand imperatively that they shall be brought to an end.

There is a great difference, however, between the means which *they* suggest for accomplishing this object, and those prompted by the propensities. The latter, as I have said, blindly inflict vengeance without the slightest regard to the *causes* which led to the crime, or the *consequences* of the punishment. They seize the aggressor, and worry, bite, scourge, imprison, or strangle him; and there their operations begin and terminate.

The moral and intellectual faculties, on the other hand, embrace even the criminal himself within the range of their sympathies. Benevolence desires to render *him virtuous*, and thereby happy, as well as to protect his victim. Veneration desires that he should be treated as a man; and conscientiousness cannot acquiesce in any administration towards him that does not tend to remove the motives of his misconduct, and to prevent their recurrence. The first step, then, which the moral and intellectual faculties combine in demanding, is a full exposition of *the causes of the offence, and the consequences of the mode of treatment proposed.*

Let us, then, pursue this investigation; and here it may be observed, that we are now in a condition to do so with something like a chance of success; for, by the aid of Phrenology, we have obtained a tolerably clear view of the elementary faculties of the mind, and the effects of differences in the size of their organs on their activity and vigour.

The leading fact, then, which arrests our attention in this inquiry, is, that *every crime proceeds from an abuse of some faculty or other;* and the question immediately arises, Whence originates the tendency to abuse? Phrenology enables us to answer—From three sources: *first*, from particular organs being too large and too active; *secondly*, from great excitement produced by external causes; or, *thirdly*, from ignorance of what are uses and what are abuses of the faculties.

The moral and intellectual powers next demand, What is

the cause of particular organs being too large and too active in individuals? Phrenology, in answer, points to the law of hereditary descent, by which the organs most energetic in the parents determine those which shall predominate in the child. Intellect then infers that, according to this view, certain individuals are unfortunate at birth, in having received from their parents organs so ill-proportioned, that abuse of some of them is almost an inevitable consequence, if the individuals are left to the sole guidance of their own propensities under the influence of temptation. Phrenology replies, that the fact appears to be exactly so. In the Phrenological Museum of Edinburgh is exhibited a large assemblage of skulls and casts of the heads of criminals, collected from Europe, Asia, Africa, and America; and an undeniable feature in them all, is a great preponderance of the organs of the animal faculties over those of the moral sentiments and intellect.

In the next place, undue excitement may arise from the individual being pressed by want of food, stimulated by intoxicating liquors, seduced by evil example, and from a variety of other unfavourable influences.

And, thirdly, abuses may arise from sheer want of knowledge concerning the constitution of the mind, and its relations to external objects. The burning of old women as witches was a crime perpetrated under the forms of law; and persecution for opinion is a crime obviously referrible like the other to this source.

I have examined the cerebral development of a considerable number of criminals, and inquired into the external circumstances in which they had been placed; and have no hesitation in saying, that if, in the case of every offender, the three sources of crime here enumerated had been investigated, reported on, and published, the belief would have become general and irresistible that the individual had been the victim of his nature and external condition, and penitentiaries would have been resorted to as the best means of abating crime and satisfying the moral feelings of the com-

munity. The public err through ignorance, and knowledge only is needed to ensure their going into the right path.*

Moreover, intellect perceives, and the moral sentiments acknowledge, that these causes exist *independently of the will of the offender.* The criminal, for example, is not the cause of the unfortunate preponderance of the animal organs in his own brain; neither is he the creator of the external circumstances which lead his propensities into abuse, or of the ignorance in which he is involved. Nevertheless, the moral and intellectual faculties of the indifferent spectator of his condition do not, on this account, admit that either for his own sake or for that of society, he should be permitted to proceed in an unrestricted course of crime. They absolutely insist on arresting his progress, and their first question is, How may this best be done? Intellect answers, *By removing the causes which produce the offences.*

The first cause—the great preponderance of the animal organs—cannot, by any means yet known, be summarily removed. Intellect, therefore, points out an alternative —that of supplying, by moral and physical restraint, the control which, in a brain better constituted, is afforded by large moral and intellectual organs; in short, of placing the offender under such a degree of effective control as absolutely to prevent the abuses of his faculties. Benevolence acknowledges this proceeding to be kind, veneration to be respectful, and conscientiousness to be just, at once to the offender himself and to society; and intellect perceives that, whenever it is adopted, it will form an important step towards preventing a repetition of the crime.

The second cause—great excitement from without—may be removed by withdrawing the individual from the influence of the unfavourable external circumstances to which he is exposed. The very restraint and control which serve to effect the first object, will directly tend to accomplish the second at the same time.

* The text was written in 1826, and now there are symptoms of this prediction being fulfilled. (1847.)

The third cause—namely, ignorance—may be removed by conveying instruction to the intellectual, and training to the moral and religious powers.

If these principles are sound, the measures now recommended, when viewed in all their consequences, should be not only the most just and benevolent, but at the same time *the most advantageous that can be adopted.* Let us contrast their results with those of the animal method.

Under the animal system, as we have already seen, no measures except the excitement of terror are taken to *prevent* the commission of crime. But many men become criminals in consequence of a constitutional deficiency in prudence, and a predominance of the daring elements in their minds. The danger operates as a challenge, and stimulates them to defy the threatened inflictions.—Under the moral plan, as soon as a tendency to abuse the faculties should appear in any individual, means of prevention would be resorted to, because the sentiments could not be satisfied unless this were done.

Under the animal system, no inquiry is made into the future proceedings of the offender, and he is turned loose upon society under the unabated influence of all the causes which led to his infringement of the law; and, as effects never cease while their causes continue to operate, he repeats his offence, and becomes the object of a new animal infliction. —Under the moral system, the causes would be removed, and the evil effects would cease.

Under the animal system, the propensities of the offender and of society are maintained in habitual excitement; for the punishment proceeds from the animal faculties, and is likewise addressed to them. Flogging, for instance, proceeds from destructiveness, and is addressed solely to sensation and fear. The treadmill springs from destructiveness in a milder form; and, as its sole object is to cause annoyance to the offender, it is obviously addressed only to cautiousnesss and his selfish feelings. Hanging and decapitation undeniably spring from destructiveness, and are administered as terrors to the propensities of persons crimi-

nally disposed. These punishments, again, especially the last, are calculated to gratify the animal faculties, and none else, in the spectators who witness them. The execution of a criminal obviously interests and excites destructiveness, cautiousness, and self-esteem, in the beholder, and nothing can be less fitted naturally than such exhibitions to satisfy benevolence, veneration, and conscientiousness.—Under the moral system, on the other hand, the faculties exercised and addressed in restraining and instructing the offender are, as exclusively as possible, the human powers. The propensities are employed merely as the servants of the moral sentiments in accomplishing their benignant purposes, and benevolence is as actively engaged in behalf of the offender as of society at large. The whole influence of the proceeding is ameliorating and elevating.

Under the animal system, the offspring of parents who have been recently engaged in either suffering, inflicting, or witnessing punishment, are likely to inherit, by the organic law, large and active animal organs, occasioned by the excitement of these organs in the parents. Thus a public execution, from the violent stimulus which it communicates to the lower faculties of the spectators, may be the direct cause of a new crop of victims for the gallows.—But under the moral system, children born of parents actively engaged in undergoing, executing, or witnessing the elevating and ennobling process of moral reformation, will, by the organic law, inherit an increased development of the moral and intellectual organs, and be further removed than even their parents from the risk of lapsing into crime.

Under the animal system, spectators of crime and accomplices need to be bribed with large rewards to induce them to communicate their knowledge of the offence; and witnesses require to be compelled by penalties to bear testimony to what they have seen concerning it. Many will recollect the affecting picture of mental agony drawn by Sir Walter Scott, when Jeanie Deans, at the bar of the High Court of Justiciary, gives evidence against her sister, which was

to deprive that sister of life. Parallel cases occur frequently in actual experience. The real cause of this aversion to betray, and internal repugnance to give evidence, is, that the moral sentiments are revolted by the delivery of the culprit to the cruelty of animal resentment.—Under the moral system, however, the higher sentiments and intellect of the spectator of a crime, and those of the nearest relatives of the offender, would unite with those of society in a unanimous desire to deliver him up, with the utmost speed, to the ameliorating influence of moral treatment, as the highest act of benevolence even to himself.

Under the animal system, the office of public executioner is odious, execrable, and universally contemned. If it were *necessary* by the Creator's institutions, it would present the extraordinary anomaly of a *necessary duty* being execrated by the moral sentiments. This would be a direct inconsistency between the dictates of the superior faculties and the arrangements of the external world.—But the animal executioner is not acknowledged as necessary by the human faculties. Under the moral system, the criminal would be committed to persons whose duties would be identical with those of the clergyman, the physician, and the teacher. These are the executioners under the moral law; and, just because their functions are highly grateful to the superior sentiments, they are the most esteemed of men.

The highest and the most important object of this long exposition of the principles of punishment under the natural laws, remains to be stated.

We are all liable to abuse our faculties; and the inquiry is interesting, What, in our cases, are the causes of the infringement of the moral law? The offences which we daily commit, are neither more nor less than minor degrees of abuse of the same faculties from which crimes arise. For example, if in private life we backbite or slander our neighbour, we commit abuses of self-esteem and destructiveness, which, if increased merely in intensity, without at all changing their nature, might end, as in Ireland, in maiming his

cattle, or, as in Spain or Italy, in murdering him outright. If, in any commercial transaction, we deliberately give false representations as to any article we have for sale, or overcharge it in price, this is just a minor abuse of secretiveness and acquisitiveness acting in absence of the moral sentiments; of which abuse, pocket-picking and stealing are merely higher degrees. I need not carry the parallel further. It is so obvious that every offence against the moral law is an abuse of some faculty or other, and that great crimes are merely great abuses, and smaller offences more slight abuses, that every one must perceive the fact to be so.

Reverting to what I observed in regard to crime, I repeat that every infringement of the moral law, the smallest as well as the greatest, is condemned by the moral sentiments and intellect, just because it is opposed to their nature, and they desire absolutely to bring all abuses to an end, from whatever source they spring, be they voluntary or involuntary.

In the present practice of society, the manifestation of animal resentment is the chief method of dealing with the minor abuses of our faculties, as well as with the higher. If one gentleman insults another, the offended person makes no inquiry into the state of mind and other causes that produced the insult, but proceeds to knock him on the head, to challenge and afterwards to shoot him, or to prosecute him in a court of law, and inflict pain by depriving him of money. These are the common methods by which men inflict animal retribution on each other, and in their essential character they do not much differ from those followed by the lower creatures.

I do not say that these proceedings are absolutely without beneficial effect. The animal faculties are selfish, and these inroads upon their enjoyment have undoubtedly a tendency to check them. It is painful to a gentleman to be knocked down or shot; and, in consequence, many men of low principles, who would not be restrained from insulting their neighbours by the dictates of their own feelings, are

induced to modify their conduct by the fear of these forms of resentment; but here the benefit ends. The infliction of the chastisement gratifies only the animal faculties of the injured party, and it is addressed exclusively to the animal part of the offender's mind. Habitual morality, however, cannot exist without supreme activity of the moral sentiments; and the whole code of animal law and animal punishment does exceedingly little to establish this as a permanent condition of mind.

Under the moral and intellectual law, everything is different. The intellectual faculties inquire into the causes of abuses, and the moral sentiments desire to remove them with kindness and respect even for the offender himself. If one person insult another, the intellect, when aided by Phrenology, perceives that he must do so either from extreme predominance of combativeness, destructiveness, and self-esteem in his brain, whence arises an impulsive tendency to impertinence; just as some ill-natured dogs and horses have a tendency to bite without provocation: or, *secondly*, from excessive external stimulus—that is to say, from some aggression committed on himself: or, *thirdly*, from ignorance—that is, from erroneously supposing unreal motives and intentions in the person whom he insults. If one man cheat another, intellect, with the assistance of Phrenology, perceives that he can do so only because acquisitiveness and secretiveness predominate in him over conscientiousness; or because the external temptation to cheat is too powerful for his faculties to resist; or because he is ignorant that cheating is as fatal to his own interest as injurious to that of his victim. In short, no abuse of the animal faculties can be committed that may not be traced to these or similar causes.

But intellect and the moral sentiments desire to remove the *causes* as the most effectual way of putting an end to the effects, and their method is one congenial to their own constitution. If a man be by nature irritable, and prone to injure every one with whom he comes into contact, they desire to remove most sedulously every influence that may tend to

exasperate his propensities, and also to surround him with a pure moral and intellectual atmosphere. If he be exposed to temptation, they desire to withdraw it; if he be misinformed, ignorant, or deceived, they desire to instruct him, or to give him correct information. Although we may have suffered injury from another, if we perceive the causes from which it has proceeded to be really such as I have now explained, and if we comprehend and believe in the supremacy of the moral sentiments, it will be impossible for us to prefer the method of redress by animal resentment.

The question naturally presents itself, What is the distinction between right and wrong under this system? If offences proceed from unfortunate development of brain, not fashioned by the individual himself,—from external temptations, which overtake him unsolicited,—or from want of knowledge which he never had it in his power to acquire, —how are the distinctions between right and wrong, merit and demerit, to be maintained? The answer is simple.

The *natural distinction between right and wrong*, so far as Man is concerned, is based on the constitution of his faculties. The act of wantonly killing another is wrong, because it is in direct opposition to the dictates of benevolence; the act of appropriating to ourselves effects belonging to another is wrong, because it is distinctly denounced by conscientiousness; and so with all other misdeeds. The *authority* of the moral law, in forbidding offences, is found in our innate consciousness that the moral sentiments are of a higher order than the propensities, and are appointed to rule them. The external sanction of the moral law depends on the whole arrangements of creation being constituted to enforce its dictates. If benevolence and conscientiousness condemn murder, and if the whole other faculties of the mind, and the external order of things, harmonize with their dictates, and combine to punish the offender, the foundation and sanctions of the moral law appear abundantly strong. It has been objected, that, in Tartary, to steal from strangers is honourable; but Dr Thomas Brown has well answered

this objection. There are more principles in the mind than benevolence, veneration, and conscientiousness; and it is possible to misinform the intellect, and thereby to misdirect equally the propensities and sentiments. The Tartars are taught to believe that all men beyond their own tribes are their enemies, and would rob and murder them if they could; and, of course, so long as this intellectual conviction lasts, strangers become the objects of their animal resentment. Every foreigner is, in their eyes, a criminal, clearly convicted of deliberate purpose to rob and murder them. In England, under Lord Ellenborough's Act, when men are convicted of acting with this *intention*, they are delivered over to the hangman to be executed; and we might as well maintain, as a general proposition, that the English are fond of hanging one another, as that the Tartars approve of robbery and murder. Strangers whom the Tartars maltreat in this manner, actually stand convicted in their minds of an intention of using them in the same way if they could. The real method of arriving at a correct view of the question, is to suppose the conviction complete in a Tartar's mind, that other men love him and would make him an object of their benevolence, and then ask him whether he approves of robbing and murdering a benefactor. There is no instance of human nature, in a state of sanity, regarding such a deed as virtuous. The moral law, therefore, when cleared of other principles that may act along with it, but are not part of it, is obviously universal and inflexible in its dictates.*

The views contained in this chapter were printed and distributed among a few friends in 1827, and I was favoured by them with several remarks. Some of these appear to merit a reply.

It is objected, that, according to the moral system of treating offenders, punishment would be abrogated and crime encouraged.

I respectfully answer, that if this system be right in itself

* This subject is more fully treated of in my work on Moral Philosophy.

and suited to the nature of Man, it will carry in itself all the punishment that will be needed, or that can serve any beneficial end. I believe that to a man whose mind consists chiefly of animal propensities and intellect,—confinement, compulsory labour, and the enforcement of moral conduct, will be highly disagreeable, and that this is the punishment which the Creator designed should attend that unfortunate combination of mental qualities. It is analogous to the pain of a wound; the object of which is, to induce the patient to avoid injuring himself again. The irksomeness and suffering to a criminal, inseparable from confinement and forced labour, are inducements to him to avoid infringements of the moral law; and when perceived by himself to arise from the connection established by the Creator between crime and the most humane means of restraining it, he will learn to submit to the infliction, without those rebellious feelings which are generally excited by pure animal retribution. It appears to me that the call for more suffering than would accompany the moral method of treatment, proceeds to a great extent from the yet untamed barbarism of our minds; just as it was the savageness of the hearts of our ancestors which led them to regard torture and burning as necessary in their administration of criminal justice. In proportion as the higher sentiments shall gain ascendency among men, severity will be less in demand, and its inutility will be more generally perceived. The Americans, in their penitentiaries, have set a good example to Europe in regard to criminal legislation. Their views still admit of improvement, but they have entered on the right path by which success is to be attained. Their countryman Dr Caldwell has offered them excellent counsel, which I hope they will appreciate and follow.

Another objection is frequently stated—that if we render prisons comfortable as schools of reform, we shall induce the lower members of the people to commit crimes in order to obtain the enjoyments and advantages which they will afford. This notion proceeds from a mistaken estimate of

the feelings of the people. However poor and uncultivated, they possess the same faculties as their superiors, and they regard crime as degrading, although the criminal were lodged in a palace. They prize the crust of bread won by honest labour, as sweeter than luxuries acquired by turpitude and fraud. These feelings will ever preserve them from seeking bodily comfort at the expense of integrity and independence. During the last Irish famine, we heard of thousands of the destitute dying from the effects of starvation; but the jails were not besieged by voluntary criminals, urging their right to be admitted and fed, in consequence of having committed robbery and murder. Moreover, there is something seriously wrong in the administration of a country so rich and intelligent as England, when a class exists which can be supposed to be tempted to crime by the imaginary comforts of a well-ordered prison; and the proper course of action is to improve the condition of the poor, and not to degrade that of criminals.

Another objection is, that the views now advocated, even supposing them to be true, are utopian, and cannot be carried into effect in the present condition of society. I deny the first branch of this objection; but admit the second to be well-founded. No system of morals which is true can be utopian—this term being understood to mean visionary and impracticable. But a true system may not be reducible to practice at its first announcement, by a people who do not know one jot of its principles, and whose guides sedulously divert their minds from studying it. Christianity itself has not yet been generally practised; but does any rational man on this account denounce it as utopian and worthless? It would be folly to expect judges and juries to abandon the existing practice of criminal jurisprudence, and to adopt that which is here recommended, before they, and the society for whom they act, understand and approve of the new views; and no one who bears in mind by what slow and laborious steps truth makes its way, and how long a period is necessary before it can develop itself in practice, will

expect any new system to triumph in the age in which it was first promulgated. I have frequently repeated in this work, that, by the moral law, we cannot enjoy the full fruits even of our own intelligence and virtue, until our neighbours have been rendered as wise and virtuous as ourselves. No reasonable man, therefore, can expect to see the principles expounded in this work, although true, generally diffused and adopted in society, until the natural means of communicating a knowledge of them, and producing a general conviction of their truth and utility, shall have been perseveringly employed for a period sufficient to accomplish this end. In the mean time, the established practices of society must be supported, if not respected; and he is no promoter of the real progress of mankind, who, the moment after he has sown the seeds of truth, and without allowing summer and autumn to bring the product to maturity, would attempt to gather the fruit. The rational philanthropist will zealously teach his views, and introduce them into practice as favourable opportunities occur; not doubting that he will sooner accomplish his object thus, than by making premature attempts at realizing them, which must inevitably end in disappointment. Already some progress is perceptible in the legislative treatment of offenders against the laws. The transportation system, in regard to male convicts, has been abandoned; and, in prison discipline, we are promised the adoption of several excellent suggestions, published by Captain Maconochie, in his instructive elucidations of "The Mark System," and in harmony with the principles of this work.*

* In some of my other publications, I have entered more into detail on the subject of criminal legislation and prison discipline. See Moral Philosophy, Lectures xi., xii., and xiii.; Notes on the United States of North America, i. 104, 171, 182, 196, 203, 204, 313; ii. 326, 369; iii. 115; Thoughts on Capital Punishment; and Remarks on the Principles of Criminal Legislation, and the Practice of Prison Discipline. The leading ideas expounded in these works, and in the foregoing section, were ably and eloquently maintained by the late Dr Charles Caldwell, Professor of the Institutes of Medicine in the University of Lexington, Kentucky, in his "New Views of Penitentiary Dis-

SECT. II.—MORAL ADVANTAGES OF THE SUFFERINGS INFLICTED UNDER THE NATURAL LAWS.

After the mind has embraced the principles of the Divine administration, benevolence and justice are discernible in the evils consequent on infringement of the natural laws. Suffering endured by one individual, also serves to warn others against transgression. These facts appear to indicate that one object of the arrangements of creation is the improvement of the moral and intellectual nature of Man. So strikingly conspicuous, indeed, is the ameliorating influence of suffering, that many persons have supposed this to be the primary object for which it is sent; a notion which, with great deference, I cannot help regarding as unfounded in principle, and dangerous in practice. If evils and misfortunes are mere mercies of Providence, it follows that a headache consequent on a debauch is not intended to prevent repetition of drunkenness, so much as to prepare the debauchee for the invisible world; and that shipwreck in a crazy vessel is not so directly designed to render the merchant cautious, as to lead him to heaven.

It is undeniable, that in innumerable instances pain and

cipline, and Moral Education and Reformation of Criminals," published at Philadelphia in 1829, and reprinted in the Phrenological Journal, vol. viii. pp. 385, 493. Mr Simpson also has treated the subject with great ability in the same Journal, vol. ix. p. 481, and in the Appendix to his work on "The Necessity of Popular Education," —a work in which he has expounded and applied many principles of the present treatise with much acuteness and felicity of illustration. In 1841, Mr M. B. Sampson published a valuable exposition of the same principles, under the title of "Criminal Jurisprudence considered in relation to Mental Organisation," several editions of which have been printed; and Captain Maconochie's more recent treatise on "The Mark System," contains expositions of specific arrangements by means of which the principles here advocated may be carried into practical effect. In the Phrenological Journal, vol. xvi. p. 1 (1843), there is published an interesting letter to the Author, "On the Application of Phrenology to Criminal Legislation and Prison Discipline," by Mr C. J. A. Mittermaier, Professor of Criminal Law in the University of Heidelberg.—See also the APPENDIX, No. XI.

sorrow are the direct consequences of our own misconduct; while at the same time it is obviously benevolent in the Deity to render them beneficial directly, as a warning against future transgression, and indirectly, as a means of leading to the purification of the mind. Nevertheless, if we shall imagine that in some instances pain is dispensed as a direct consequence of particular transgressions, and in others only on account of sin in general, and with the view of ameliorating the spirit of the sufferer, we may ascribe inconsistency to the Creator, and expose ourselves to the danger of attributing our own afflictions to His favour, and those of other men to His wrath; thus fostering in our minds self-conceit and uncharitableness. Those who entertain the belief that bad health, worldly ruin, and sinister accidents, befalling them, are not the Divinely pre-ordained consequences of infringement of the laws of nature, but particular manifestations of the love of the Creator towards themselves, make slight inquiry into the natural causes of their miseries, and bestow few efforts to remove them. In consequence, the chastisements endured by them neither correct their own conduct, nor deter others from committing similar transgressions. Some religious sects, who entertain these views of the Divine government, literally act upon them, and refuse to inoculate their children with the cow-pox, or to take other means of avoiding natural calamities. Regarding these as dispensations of Providence sent to prepare them for a future world, they conceive that the more that befall them the better. Further, these ideas, besides being repugnant to the common sense of mankind, are at variance with the principle that the world is arranged so as to favour virtue and discountenance vice; because favouring virtue obviously means that the favoured virtuous will enjoy more happiness, and suffer fewer misfortunes, than the vicious. The view, therefore, now advocated, appears less exceptionable; namely, that suffering inflicted under the natural laws serves a double purpose—directly to warn us against transgressions—and indirectly (when rightly appre-

hended) to subdue our lower propensities, and purify and vivify our moral and intellectual powers.

Bishop Butler coincides in this interpretation of natural calamities. "In the present state," says he, "all which we enjoy, and a great part of what we suffer, *is put in our own power*.* For pleasure and pain are the consequences of our actions; and we are endued by the Author of our nature with capacities of foreseeing these consequences. . . I know not that we have any one kind or degree of enjoyment, but by the means of our own actions. And by prudence and care we may, for the most part, pass our days in tolerable ease and quiet; or, on the contrary, we may, by rashness, ungoverned passion, wilfulness, or even by negligence, make ourselves as miserable as ever we please. And many do please to make themselves extremely miserable; *i.e.*, to do what they know beforehand will render them so. They follow those ways, the fruit of which they know, by instruction, example, experience, will be disgrace, and poverty, and sickness, and untimely death. This every one observes to be the general course of things; though, it is to be allowed, we cannot find by experience, that all our sufferings are owing to our own follies."† *Hereditary* diseases, earthquakes, volcanoes, hurricanes, and other convulsions of nature, justify this remark. The sufferings which they occasion overtake us without reference to our own conduct.

It has been objected that such evils as the breaking of an arm by a fall, are often so disproportionately severe, that, in appointing them, the Creator must have had in view some other and more important object than that of making them serve as mere motives to the observance of the physical laws; and that that object must be, to influence the mind of the sufferer, and draw his attention to concerns of higher import.

In answer I remark, that the human body is liable to destruction by severe injuries; and that the degree of suffer-

* These words are printed in Italics in the original.

† Analogy of Religion, Part I. chap. ii.

ing, in general, bears a just proportion to the danger connected with the transgression. Thus, a slight surfeit is attended only with headache or general uneasiness, because it does not endanger life; a fall on any muscular part of the body is followed either with no pain, or with only a slight degree of uneasiness—for the reason, apparently, that it is not seriously injurious to life; but when a leg or arm is broken, the pain is intensely severe, because the bones of these limbs stand high in the scale of utility to Man. The human body is so framed that it may fall nine times and suffer little damage, but the tenth time a limb may be broken, which will entail painful suffering. By this arrangement the mind is kept alive to danger to such an extent as to ensure general safety, while at the same time it is not overwhelmed with terror by inflictions too severe and too frequently repeated. In particular states of the body, a slight wound may be followed by inflammation and death; but these are the results not simply of the wound, but of a previous derangement of health, occasioned by serious departures from the organic laws.

On the whole, therefore, I discover no adequate reason for regarding the consequences of physical accidents in any other light than as intended to deter us from infringing the natural laws, and also to serve as means of promoting moral and religious improvement. In the next chapter I shall enter into this subject more in detail. On page 298 I have pointed out the distinction between right and wrong in human actions, and do not consider it necessary here to revert to that topic.

In the preceding chapters we have obtained glimpses of some of the *sanctions* of the moral law, which may be briefly recapitulated. If we obey it, many desirable results ensue. In the first place, we enjoy the highest gratifications of which our nature is susceptible, in habitual and sustained activity of our noblest faculties. Secondly, We become objects of esteem and affection to our fellow-men, and enjoy exalted social pleasure. Thirdly, Whatever we undertake,

being projected in harmony with the course of nature, has the best guarantee for its success. Fourthly, By observing the moral law, we shall place ourselves in the most favourable condition for obeying the organic law, and for enjoying health of body and buoyancy of mind. Fifthly, By obeying the moral, intellectual, and organic laws, we shall place ourselves in the best condition for observing the physical laws, and thereby reaping the countless benefits conferred by them.

To perceive, on the other hand, the penalties by which the Creator punishes infringements of the moral law, we need only to reverse the picture. There is none of that elevated, refined, and steady enjoyment, which springs from the supreme activity of the moral sentiments and intellect, and from the perception of the harmony between them and the institutions of creation. By infringing the moral law we become objects of dislike and aversion to our fellow-men; and this carries denial of gratification to many of our social faculties. Whatever we undertake in opposition to the moral law, being an enterprise against the course of nature, cannot succeed; and its fruits must be disappointment and vexation. Inattention to the moral and intellectual law incapacitates us for obedience to the organic and physical laws; and sickness, pain, and poverty overtake us. The whole scheme of creation, then, appears constituted for the purpose of enforcing obedience to the moral law: virtue, religion, and happiness, seem to be founded in the inherent constitution of the human faculties, and in the adaptation of the external world to them; and not to depend on the will, the fancies, or the desires of Man.

CHAPTER VII.

ON THE COMBINED OPERATION OF THE NATURAL LAWS.

Much confusion exists in the minds of many persons in regard to what are called accidents and misfortunes. If a great storm arises at sea, and if a ship is caught near a lee-shore and is driven by the normal action of the winds and the waves on a rock, or dashed to pieces, this is called a melancholy accident, or a great misfortune, but few men think of calling in the action of a special Providence to account for it. If, however, ten persons, out of an hundred in the ship, are floated ashore on pieces of the wreck, while the rest are drowned, the escape of the few is called a merciful, perhaps a miraculous interposition of Providence in their behalf; and the survivors return solemn thanks to God for their preservation. The feeling of gratitude for their escape naturally rises in their minds, and in returning thanks to God for prolonged life in such circumstances, most men obviously obey an instinct of their nature. The emotion is not wrong; but our erroneous religious education, which has dissevered the sentiment of veneration from events occurring under the ordinary course of God's providence, gives it in the eye of reason an appearance of inconsistency which does not really belong to it. A young and unprotected girl, whose parents and whole property have perished in the wreck, and who in consequence is left desolate and poor, might be prompted to murmur at the event, and to regard the ways of Providence as at least inscrutable, if not partial; and to say

that if God saved the ten, He destroyed the ninety; and that if He saved the stay of one, He removed the support of many more. Reason proclaims that, in this event, God's providence was manifested in accordance with established laws; and under a proper system of religious education we should be trained to venerate it in all its evolutions, to submit with resignation when we have been unable to place ourselves in accordance with the Divine laws, and to rejoice in gratitude at all times when we receive benefits from their influence.

The following exposition of the philosophy of accidents appears to be able and sound. "There is a prejudice," says Mr Brown Galloway, "in the minds of many men against the admission of a Providence superintending the unforeseen accidents or coincidences of events. We may hope partly to remove it by explaining what accidents or coincidences are. Now an accident, properly so called, is an event which forms no part of some certain train of causes and effects designed or contemplated by us, but enters into it from without, and affects its future progress either by impeding or by furthering it. When it obstructs or impedes, it is called an accident, but when it is favourable it is more generally named a coincidence. The majority of men, looking no farther than that train of causes and effects which they are engaged about, consider accidents as events altogether without causes. But a thinking man will readily perceive that the accidental event is part of another train of causes and effects, which impinges upon the train he was contemplating.

"There are innumerable co-existent trains of causes and effects going on in the world. These, though they have distinct and independent courses, yet are frequently meeting, uniting, or crossing one another; so that, if we may be allowed the expression, they are wrought together in a sort of network. Accidents are truly the meetings or crossings of two or more trains of causes and effects, and are consequently of much importance in the Divine economy; for they are thus the knots or nexuses which unite the whole system of events together. And shall we suppose that God,

who has ordered the separate trains of causes and effects, has not contemplated and designed their nexuses, except in those few cases where human wisdom has foreseen? Impossible. History abounds with instances of the great importance of those nexuses, and common life affords many more."*

These remarks apply chiefly to the combined action of the physical laws; and I proceed to adduce instances of the combined action of the organic and moral, and also of the moral and physical laws.

The defective administration of justice is a copious source of human suffering in all countries; yet it is surprising how rude are the arrangements still in use, even in free and enlightened countries, for accomplishing this important end.

A jury in a civil cause in Edinburgh consists of twelve men, eight or ten of whom are frequently summoned from the country, within a distance of twenty or thirty miles round the capital. Several of these individuals probably hold the plough, wield the hammer or the hatchet, or carry on some other useful and respectable but laborious occupation, for six days in the week. Their muscular systems are in constant exercise, and their intellectual faculties are rarely called on for any great exertion. They are not accustomed to reading beyond the Bible and a weekly newspaper; they are still less in the habit of deep reflection; and in general they live much in the open air.

In this condition they are placed in a jury-box at ten o'clock in the morning, after having travelled probably from seven to twenty-five miles to reach the court: counsel address long speeches to them; numerous witnesses are examined; and the cause is branched out into complicated details of fact, and wiredrawn distinctions in argument. The court, until lately, was a small and ill-ventilated apart-

* Philosophy and Religion, with their Mutual Bearings, by William Brown Galloway, A.M., p. 222. London: Smith, Elder, and Co., 1837. This is an able work, but owing to the want of mental philosophy as its basis it is not practical, and has not commanded that attention which otherwise it would have merited.

ment, and in consequence it was generally crowded and over-heated. Without being allowed to breathe fresh air, or to take exercise or food, they were confined to their seats till eight or ten in the evening,—when they retired to return a verdict, by which they might dispose of thousands of pounds, and in which they were required to be unanimous. Recently the court-house has been enlarged and ventilated, and now nine may give the verdict; but in other respects matters continue in the condition here described.

Here, then, is a tissue of errors which could not exist for a day if the natural laws were generally understood. In the first place, the daily habits and occupations of such jurors render their brains inactive, and their intellects consequently incapable of attending to, and comprehending, complicated cases of fact and argument. Secondly, their memories cannot retain the facts, while their skill in penmanship and literature is not sufficient to enable them to take notes; and their reflecting faculties are not capable of generalising. Their education and daily pursuits, therefore, do not furnish them with power of mental action, and principles of thinking, sufficient to enable them to unravel the web of intricacies presented to their understandings. Thirdly, protracted confinement in a sedentary position operates injuriously on even vivacious temperaments:—on such men as those in question, it has a tenfold effect in lowering the action of the brain and inducing mental incapacity, because it is diametrically opposed to their usual habits. Add to these considerations, that occasionally a jury trial lasts two, three, or even four days, each of which presents a repetition of the circumstances here described; and then the reader may judge whether such jurors are the fittest instruments, and in the best condition, for disposing of the fortunes of a people who boast of their love of justice, and of their admirable institutions for obtaining it.

The influence of the bodily condition of a human being on his mental capacity seems never to have entered the imaginations of our legislators as a matter of importance in

the administration of justice. In the Circuit Courts of Scotland, the judges frequently sit for several days in succession in a crowded apartment, intently engaged in business, from ten o'clock in the morning till eight, ten, or twelve at night, without any extensive intermission or exercise. They go to their hotel at these late hours, dine, take wine, retire to bed, and next morning resume their seats on the bench. By the laws of nature, which never cease to operate, the effect of this conduct is to impair the vigour of the moral and intellectual organs, and by constraint, want of exercise, and obstruction of the bodily functions, to irritate and exalt the activity of the animal organs; so that, at the close of a circuit, even the strongest and most estimable and gifted men are physically deteriorated, and mentally incapacitated for the distribution of justice, compared with themselves when they began their labours. It is accordingly observed that, in proportion as a long and heavy session in circuit advances, irritability, impatience, and intellectual obscuration, appear in the judges. The accused who go to trial first, therefore, have a far higher chance of obtaining justice than those who appear last on the roll.

In these instances there are evident infringements of the organic and moral laws; and the combined result is the maladministration of justice, of which the country so loudly complains. The proper remedies will be found in educating the people more effectually, in training them to the exercise of their mental faculties, and in observing the organic laws in the structure of court-rooms, and in the proceedings that take place within them.

Another example of the combined operation of the natural laws is afforded by the great fires which occurred in Edinburgh in November 1824, when the Parliament Square and a part of the High Street were consumed. That calamity may be viewed in the following light:—The Creator constituted England and Scotland with such qualities, and placed them in such relationship, that the inhabitants of both king-

doms would be most happy in pursuing their separate vocations, and acting towards each other, under the supremacy of the moral sentiments. We have lived to see this practised, and to reap the reward. But the ancestors of the two nations did not believe in the moral government of the world, and they preferred to act according to the suggestions of the propensities; that is to say, they waged furious wars, and committed wasting devastations on each other's properties and lives. It is obvious from history that the two nations were equally ferocious, and delighted equally in each other's calamities. This was clearly a violent infringement of the moral law; and one effect of it was to render the possession of a stronghold an object of paramount importance. The hill on which the Old Town of Edinburgh is built was naturally surrounded by marshes, and presented a perpendicular front to the west, capable of being crowned with a castle. It was appropriated, and the metropolis of Scotland was founded there, obviously under the inspiration of the animal and intellectual faculties. It was fenced round with ramparts, built to exclude the fierce warriors who then inhabited the country lying south of the Tweed, and also to protect the inhabitants from the feudal banditti who infested their own soil. The space within the walls, however, was limited and narrow; the attractions to the spot were numerous; and to make the most of it, our ancestors erected the enormous masses of high and crowded buildings which now compose the High Street and the wynds or alleys on its two sides. These abodes, moreover, were constructed, to a great extent, of timber; for not only the joists and floors, but the partitions between the rooms, were made of massive wood.

Our ancestors did all this in the perfect knowledge of the physical law, that ignited wood not only is consumed itself, but envelopes in inevitable destruction every combustible object within its influence. Further, their successors, even when the necessity for close building had ceased, persevered in the original error; and, though well knowing that every year added to the age of these fabrics increased their

liability to burn, they not only allowed them to be occupied as shops filled with spirituous liquors and other highly inflammable materials, but let out the upper floors for brothels —introducing thereby into the heart of this magazine of combustibles the most reckless and immoral of mankind. The consummation was two tremendous fires in November 1824 (the one originating in a whisky-cellar, and the other in a garret-brothel), which consumed the Parliament Square and a portion of the High Street, destroying property to the extent of many thousands of pounds, and spreading misery and ruin over a considerable part of the population of the city. Wonder, consternation, and awe, were forcibly excited at the vastness of the calamity; and in the sermons that were preached, and the dissertations that were written upon it, much was said of the inscrutable ways of Providence, which sent such visitations on the people, enveloping the innocent and the guilty in one common whirlwind of ruin.

According to the exposition of the ways of Providence which I have ventured to give, there was nothing wonderful, nothing vengeful, nothing arbitrary, in the whole occurrence. The only reason for surprise was, that it did not take place generations before. The necessity for these fabrics originated in gross violations of the moral law; they were constructed in contempt of the physical law; and latterly the moral law was set at defiance, by placing in them inhabitants abandoned to the worst habits of recklessness and intoxication. The Creator had bestowed on men faculties to perceive all this, and to avoid the calamity, whenever they chose to exert them; and the destruction that ensued was the punishment of following the propensities, in preference to the dictates of intellect and morality. The object of the destruction, as a natural event, was to lead men to avoid repetition of the offences: but the principles of the Divine government are not yet comprehended. Acquisitiveness whispers that more money may be made of houses consisting of five or six floors under one roof, than of houses consisting of only two or three; and erections the very counterparts of the

former have since been reared on the spot where the others stood, and, sooner or later, they also will be overtaken by the natural laws, which never slumber or sleep.

The true method of arriving at a sound view of calamities of this kind, is to direct our attention, in the first instance, to the law of nature, from the operation of which they have originated; then to find out the uses and advantages of that law, when observed; and to discover whether or not the evils under consideration have arisen from violation from it. In the present instance, we should never lose sight of the fact that the houses in question stood erect, and the furniture in safety, by the very same law of gravitation which made them topple to the foundation when it was infringed; and that mankind enjoy all the benefits which result from the combustibility of timber as fuel, by the very same law which makes it, when unduly ignited, the cause of destructive conflagration.

This instance affords a striking illustration of the manner in which the physical and organic laws are constituted in harmony with, and in subserviency to, the moral law. The motive which led to the construction of the houses in the Old Town of Edinburgh (with the deprivation of free air and light, and liability to combustion that attended them), is found in the excessive predominance of combativeness, destructiveness, self-esteem, and acquisitiveness, in our ancestors; and although the ancient personages who erected these monuments of animal supremacy had no conception that, in doing so, they were laying the foundations of a severe punishment to themselves and their posterity,—yet, when we compare the comforts and advantages that would have accompanied dwellings constructed under the inspiration of benevolence, ideality, and enlightened intellect, with the contaminating, debasing, and dangerous effects of the actual structures, we perceive clearly that our ancestors were really the instruments of chastising their own transgressions, and of transmitting that chastisement to their posterity so long as the animal supremacy shall be prolonged.

Another example may be given. Men, by uniting under

one leader, may, in virtue of the social law, acquire great advantages which singly they could not attain. The condition under which the benefits of that law are permitted is, that the leader shall know and obey the natural laws connected with his enterprise: If he neglect these, then the same principle which gives the social body the benefit of his observing them, involves it in the natural consequences of his infringement; and this is just, because, under the natural law, the leader must necessarily be chosen by his followers, and they are responsible for not attending to his natural qualities. Some illustrations of the consequences of neglecting this law may be stated, in which the mixed operation of the physical and moral laws will appear.

During the last French war, a squadron of English ships was sent to the Baltic with military stores, and, in returning home up the North Sea, they were beset, for two or three days, by a thick fog. It was about the middle of December, and no correct knowledge of their exact situation was possessed. Some of the commanders proposed lying-to all night, and proceeding only during day, to avoid running ashore unawares. The commodore was exceedingly attached to his wife and family, and after stating his determination to pass Christmas with them in England if possible, ordered that the ships should prosecute their voyage. The very same night they all struck on a sandbank off the coast of Holland; two ships of the line were dashed to pieces, and every man on board perished. The third ship, drawing less water, was forced over the bank by the waves and stranded on the beach; the crew were saved, but led to a captivity of many years' duration. These vessels were destroyed under the physical laws; but this calamity owed its origin to the predominance of the animal over the moral and intellectual faculties in the commodore. The gratification which he sought to obtain was individual and selfish; and if his benevolence, veneration, conscientiousness, and intellect, had been as alert as his domestic affections, and carried as forcibly home to his mind the welfare of the men under his

charge as that of his own family—nay, if these faculties had been sufficiently alive to see the danger to which he exposed even his own life, and the happiness of his wife and children —he never could have followed the precipitate course which consigned himself and so many brave men to a watery grave.

Some years ago, the Ogle Castle, East Indiaman, was offered a pilot coming up the Channel; but the captain refused assistance, professing his own skill to be sufficient. In a few hours the ship ran aground on a sandbank, and every human being on board perished in the waves. This accident also arose from physical causes; but their unfavourable operation sprang from self-esteem, pretending to knowledge which the intellect did not possess; and as it is only by employing the latter that obedience can be yielded to the physical laws, the destruction of the ship was indirectly the consequence of the infringement of the moral and intellectual laws.

An old sailor, whom I met on the Queensferry passage, told me that he had been nearly fifty years at sea, and once was in a fifty-gun ship in the West Indies. The captain, he said, was "a fine man;" he knew the climate, and foresaw a hurricane coming, by its natural signs;—on one occasion, in particular, he struck the topmasts, lowered the yards, lashed the guns, and made each man supply himself with food for thirty-six hours; and scarcely was this done when the hurricane came on. The ship lay for four hours on her beam-ends in the water, but all was prepared; the men were kept in vigour during the storm, and fit for every exertion; the ship at last righted, suffered little damage, and proceeded on her voyage. The fleet which she convoyed was dispersed, and a great number of the ships foundered. Here we see the benefits accruing from the supremacy of the moral and intellectual faculties, and discover to what a surprising extent these afford a guarantee against even the fury of the ocean in its highest state of agitation.

A striking example of the kind of protection given by high moral and intellectual qualities, even amidst the most

desperate physical circumstances, is furnished by the following letter written by the late Admiral Lord Exmouth to a friend: "Why do you ask me to relate the wreck of the Dutton? Susan (Lady Exmouth) and I were driving to a dinner-party at Plymouth, when we saw crowds running to the Hoe; and learning it was a wreck, I left the carriage to take her on, and joined the crowd. I saw the loss of the whole five or six hundred men was inevitable without somebody to direct them, for the last officer was pulled on shore as I reached the surf. I urged their return, which was refused; upon which I made the rope fast to myself, and was hauled through the surf on board,—established order, and did not leave her until every soul was saved but the boatswain, who would not go before me. I got safe, and so did he, and the ship went all to pieces." This was noble conduct, and it shows how high moral and intellectual energy, by obeying the physical laws, may find safety even in circumstances that appear to feebler minds to exclude all possibility of escape.

Indeed, there is reason to believe that the human intellect will, in time, be able, by means of science and observation, to foresee approaching storms, and thus obtain protection against their effects. The utility of the marine barometer, or the sympiesometer, in indicating approaching storms, is strikingly shown by the following extract from the Edinburgh Philosophical Journal:—

"The correspondent (Mr Stevenson, civil-engineer) to whom we are indebted for the notice regarding the Scotch fisheries, inserted in this number, informs us, that having occasion, towards the conclusion of his voyage, in the beginning of September last, to visit the Isle of Man, he beheld the interesting spectacle of about three hundred large fishing-boats, each from fifteen to twenty tons' burden, leaving their various harbours at that island in an apparently fine afternoon, and standing directly out to sea, with the intention of prosecuting the fishery under night. He at the same time remarked, that both the common marine barometer, and Adie's sympiesometer, which were in the cabin of his vessel,

indicated an approaching change of weather, the mercury falling to 29·5 inches. It became painful, therefore, to witness the scene; more than a thousand industrious fishermen, lulled to security by the fineness of the day, scattering their little barks over the face of the ocean, and thus rushing forward to imminent danger, or probable destruction. At sunset, accordingly, the sky became cloudy and threatening; and in the course of the night it blew a very hard gale, which afterwards continued for three days successively. This gale completely dispersed the fleet of boats, and it was not without the utmost difficulty that many of them reached the various creeks of the island. It is believed no lives were lost on this occasion; but the boats were damaged, much tackle was destroyed, and the men were unnecessarily exposed to danger and fatigue. During the same storm, it may be remarked, thirteen vessels were either totally lost or stranded between the Isle of Anglesey and St Bee's Head in Lancashire. Mr Stevenson remarks how much it is to be regretted that the barometer is so little in use in the mercantile marine of Great Britain, compared with the trading vessels of Holland; and observes, that though the common marine barometer is perhaps too cumbersome for the ordinary run of fishing and coasting vessels, yet Adie's sympiesometer is so extremely portable, that it may be carried even in a Manx boat. Each lot of such vessels has a commodore, under whose orders the fleet sails; it would therefore be a most desirable thing that a sympiesometer should be attached to each commodore's boat, from which a preconcerted signal of an expected gale or change of weather, as indicated by the sympiesometer, could easily be given."*

Dr Neil Arnott, in mentioning the great utility of the marine barometer, states that he himself was "one of a numerous crew who probably owed their preservation to its almost miraculous warning. It was in a southern latitude. The sun had just set with placid appearance, after a beautiful afternoon, and the usual mirth of the evening watch

* Vol. ii. p. 196; Jan. 1820.

was proceeding, when the captain's order came to prepare with all haste for a storm. The barometer had begun to fall with appalling rapidity. As yet, the oldest sailors had not perceived even a threatening in the sky, and were surprised at the extent and hurry of the preparations: but the required measures were not completed, when a more awful hurricane burst upon them than the most experienced had ever braved. . . In that awful night, but for the little tube of mercury which had given the warning, neither the strength of the noble ship, nor the skill and energies of the commander, could have saved one man to tell the tale."*

On many occasions the crews of fishing-boats have been lost through an obstinate disinclination to make use of barometers provided for their advantage. Experience, however, is fast curing our fishermen of such folly.

One of the most instructive illustrations of the connection between the different natural laws is presented in Captain Lyon's Brief Narrative of an unsuccessful attempt to reach Repulse Bay, in his Majesty's ship Griper, in the year 1824.

Captain Lyon mentions, that he sailed in the Griper on 13th June 1824, in company with his Majesty's surveying vessel Snap, as a store-tender. The Griper was 180 tons burden, and "drew 16 feet 1 inch abaft, and 15 feet 10 inches forward." On the 26th, he "was sorry to observe that the Griper, from her great depth and sharpness forward, pitched very deeply." She sailed so ill, that, "in a stiff breeze, and with studding-sails set, he was unable to get

* Elements of Physics, 2d ed., i. 342. A theory of storms, based on numerous and extensive observations, has been propounded by Mr Espy of Philadelphia, which attempts to explain, on philosophical principles, the causes of the depression of the barometer previous to a hurricane, and also of the succeeding storm itself. There is a prospect, therefore, of the laws which govern even storms being at length ascertained. [As to Espy's views, see Mr Robert Russell's work on North America, its Agriculture and Climate, pp. 305, 385; Edin. 1857. We may add, that the electric telegraph promises to be of the greatest use in announcing the approach of tempests. Already arrangements have been made for the regular transmission of meteorological information with that view.—Ed.]

above four knots an hour out of her, and she was twice whirled round in an eddy in the Pentland Firth, from which she could not escape." On the 3d July, he says, "being now fairly at sea, I caused the Snap to take us in tow, which I had declined doing as we passed up the east coast of England, although our little companion had much difficulty in keeping under sufficiently low sail for us, and by noon we had passed the Stack Back. The Snap was of the greatest assistance, the Griper frequently towing at the rate of five knots, in cases where she would not have gone three. On the forenoon of the 16th, the Snap came and took us in tow; but, at noon on the 17th, strong breezes and a heavy swell obliged us again to cast off. We scudded while able, but our depth in the water caused us to ship so many heavy seas, that I most reluctantly brought to under storm stay-sails. This was rendered exceedingly mortifying, by observing that our companion was perfectly dry, and not affected by the sea. When our stores were all on board, we found our narrow decks completely crowded by them. The gangways, forecastle, and abaft the mizzenmast, were filled with casks, hawsers, whale-lines, and stream cables, while on our straitened lower decks we were obliged to place casks and other stores, in every part but that allotted to the ship's company's mess-tables; and even my cabin had a quantity of things stowed away in it. It may be proper to mention, that the Fury and Hecla, which were enabled to stow *three* years' provisions, were each exactly *double* the size of the Griper, and the Griper carried two years and a half's provisions."

Having arrived in the Polar Seas they were visited by a storm, of which Captain Lyon gives the following description:—"We soon, however, came to fifteen fathoms, and I kept right away, but had then only ten; when, being unable to see far around us, and observing, from the whiteness of the water, that we were on a bank, I rounded to at seven A.M., and tried to bring up with the starboard anchor and seventy fathoms chain, but the stiff breeze and heavy sea caused this

to part in half an hour, and we again made sail to the north-eastward; but finding we came suddenly to seven fathoms, and that the ship could not possibly work out again, as she would not face the sea, or keep steerage-way on her, I most reluctantly brought her up with three bowers and a stream in succession, yet not before we had shoaled to five and a half. This was between eight and nine A.M., the ship pitching bows under, and a tremendous sea running. At noon the starboard bower anchor parted, but the others held.

"As there was every reason to fear the falling of the tide, which we knew to be from twelve to fifteen feet on this coast, and in that case the total destruction of the ship, I caused the long-boat to be hoisted out, and, with the four smaller ones, to be stored to a certain extent with arms and provisions. The officers drew lots for their respective boats, and the ship's company were stationed to them. The long-boat having been filled full of stores which could not be put below, it became requisite to throw them overboard, *as there was no room for them on our very small and crowded decks, over which heavy seas were constantly sweeping.* In making these preparations for taking to the boats, it was evident to all, that the long-boat was the only one that had the slightest chance of living under the lee of the ship, should she be wrecked; but every man and officer drew his lot with the greatest composure, though two of our boats would have swamped the instant they were lowered. Yet, such was the noble feeling of those around me, that it was evident, that, had I ordered the boats in question to be manned, their crews would have entered them without a murmur. In the afternoon, on the weather clearing a little, we discovered a low beach all-around astern of us, on which the surf was running to an awful height, and it appeared evident that no human power could save us. At three P.M., the tide had fallen to twenty-two feet (*only six more than we drew*), *and the ship, having been lifted by a tremendous sea, struck with great violence the length of her keel.* This we naturally conceived was the fore-runner of her total wreck, and we stood in readiness to take

the boats, and endeavour to hang under her lee. She continued to strike with sufficient force to have burst any less fortified vessel, at intervals of a few minutes, whenever an unusually heavy sea passed us. And as the water was so shallow, these might be called breakers rather than waves, for each in passing burst with great force over our gangways, and, as every sea 'topped,' our decks were continually, and frequently deeply, flooded. All hands took a little refreshment, for some had scarcely been below for twenty-four hours, and I had not been in bed for three nights. Although few or none of us had any idea that we should survive the gale, we did not think that our comforts should be entirely neglected, and an order was therefore given to the men to put on their best and warmest clothing, to enable them to support life as long as possible. Every man, therefore, brought his bag on deck, and dressed himself; and in the fine athletic forms which stood before me, I did not see one muscle quiver, nor the slightest sign of alarm. The officers each secured some useful instrument about them, for the purpose of observation, although it was acknowledged by all that not the slightest hope remained. And now that everything in our power had been done, I called all hands aft, and to a merciful God offered prayers for our preservation. I thanked every one for his excellent conduct, and cautioned them, as we should in all probability soon appear before our Maker, to enter His presence as men resigned to their fate. We then all sat down in groups, and, sheltered from the wash of the sea by whatever we could find, many of us endeavoured to obtain a little sleep. Never, perhaps, was witnessed a finer scene than on the deck of my little ship, when all the hope of life had left us. Noble as the character of the British sailor is always allowed to be in cases of danger, yet I did not believe it to be possible, that amongst forty-one persons not one repining word should have been uttered. The officers sat about, wherever they could find a shelter from the sea, and the men lay down conversing with each other with the most perfect calmness.

Each was at peace with his neighbour and all the world, and I am firmly persuaded that the resignation which was then shown to the will of the Almighty was the means of obtaining His mercy. At about six P.M., the rudder, which had already received some very heavy blows, rose, and broke up the after-lockers, and this was the last severe shock that the ship received. We found by the well that she made no water, and by dark she struck no more. God was merciful to us, and the tide, almost miraculously, fell no lower. At dark, heavy rain fell, but was borne in patience, for it beat down the gale, and brought with it a light air from the northward. At nine P.M. the water had deepened to five fathoms. The ship kept off the ground all night, and our exhausted crew obtained some broken rest." (P. 76.)

In humble gratitude for his deliverance, he called the place "The Bay of God's Mercy," and "offered up thanks and praises to God, for the mercy he had shown to us."

On 12th September they had another gale of wind, with cutting showers of sleet and a heavy sea. "*At such a moment as this*," says Captain Lyon, "*we had fresh cause to deplore the extreme dullness of the Griper's sailing; for though almost any other vessel would have worked off this lee-shore, we made little or no progress on a wind, but remained actually pitching, forecastle under, with scarcely steerage-way*, to preserve which I was ultimately obliged to keep her nearly two points off the wind." (P. 98.)

Another storm overtook them, which is described as follows:—"Never shall I forget the dreariness of this most anxious night. Our ship pitched at such a rate, that it was not possible to stand, even below; while on deck we were unable to move, without holding by ropes, which were stretched from side to side. The drift snow flew in such sharp heavy flakes, that we could not look to windward, and it froze on deck to above a foot in depth. The sea made incessant breaches quite fore and aft the ship, and the temporary warmth it gave while it washed over us was most painfully checked, by its almost immediately freezing on

our clothes. To these discomforts were added the horrible uncertainty as to whether the cables would hold until daylight, and the conviction, also, that if they failed us we should instantly be dashed to pieces, the wind blowing directly to the quarter in which we knew the shore must lie. Again, should they continue to hold us, we feared, by the ship's complaining so much forward, that the bits would be torn up, or that she would settle down at her anchors, overpowered by some of the tremendous seas which burst over her. At dawn on the 13th, thirty minutes after four A.M., we found that the best bower cable had parted; and, as the gale now blew with terrific violence from the north, there was little reason to expect that the other anchors would hold long; or, if they did, we *pitched so deeply, and lifted so great a body of water each time, that it was feared the windlass and forecastle would be torn up, or she must go down at her anchors.* Although the ports were knocked out, and a considerable portion of the bulwark cut away, she could scarcely discharge one sea before shipping another, and the decks were frequently flooded to an alarming depth.

"At six A.M. all farther doubts on this particular account were at an end; for, having received two overwhelming seas, both the other cables went at the same moment, and we were left helpless, without anchors, or any means of saving ourselves, should the shore, as we had every reason to expect, be close astern. And here, again, I had the happiness of witnessing the same general tranquillity as was shown on the 1st of September. There was no outcry that the cables were gone; but my friend Mr Manico, with Mr Carr the gunner, came aft as soon as they recovered their legs, and, in the lowest whisper, informed me that the cables had all parted. The ship, in trending to the wind, lay quite down on her broadside, and, as it then became evident that nothing held her, and that she was quite helpless, each man instinctively took his station; while the seamen at the leads, having secured themselves as well as was in their power, repeated their soundings, on which our pre-

servation depended, with as much composure as if we had been entering a friendly port. Here, again, that Almighty power, which had before so mercifully preserved us, granted us His protection." (P. 100.)

Nothing can be more interesting and moving than this narrative; it displays great predominance of the moral sentiments, but an intellect sadly unenlightened as to the natural laws. I have quoted, in Captain Lyon's own words, his description of the Griper, loaded to such excess that she drew sixteen feet water—that she was incapable of sailing—that she was whirled round in an eddy in the Pentland Firth—and that seas broke over her which did not wet the deck of the little Snap, not half her size. Captain Lyon knew all this, and also the roughness of the climate to which he was steering; and, with these outrages of the physical law staring him in the face, he proceeded on his voyage, without addressing, so far as appears from his narrative, one remonstrance to the Lords of the Admiralty on the subject of this infringement of the principles of common prudence. My opinion is, that Captain Lyon was not blind to the errors committed in his equipment, or to their probable consequences; but that his powerful sentiment of veneration, combined with cautiousness and love of approbation (misdirected in this instance), deprived him of courage to complain to the Admiralty, through fear of giving offence; or that, if he did complain, they prevented him from stating the fact in his narrative. To the tempestuous North he sailed; and his greatest dangers were clearly referrible to the very infringements of the physical laws which he describes. When the tide ebbed, his ship reached to within six feet of the bottom, and, in the hollow of every wave, struck with great violence: but she was loaded at least four feet too deeply, by his own account; so that, if he had done his duty, she would have had four feet of additional water, or ten feet in all, between her and the bottom, even in the hollow of the wave—a matter of the very last importance in such a critical situation. Indeed, with four feet more water, she would

not have struck; besides, if less loaded, she would have struck less violently. Again, when pressed upon a lee-shore, her incapacity for sailing was a most obvious cause of danger. In short, if Providence is to be regarded as the cause of these calamities, there is no indiscretion which it is possible for Man to commit, that may not, on the same principles, be charged against the Creator.

But the moral law, again, shines forth in delightful splendour in the conduct of Captain Lyon and his crew, when in the most forlorn condition. Piety, resignation, and manly resolution, then animated them to the noblest efforts. On the principle that the power of accommodating our conduct to the natural laws depends on the activity of the moral sentiments and intellect, and that the more numerous the faculties that are excited, the greater is the energy communicated to the whole system, I would say, that while Captain Lyon's sufferings were, in a great degree, brought on by his infringements of the physical laws, his escape was greatly promoted by his obedience to the moral law; and that Providence, in the whole occurrences, proceeded on the broad and general principle, which sends advantage uniformly as the reward of obedience, and evil as the punishment of infringement, of every particular law of creation.

That storms and tempests have been instituted for some benevolent end, may perhaps be acknowledged when their causes and effects are fully known, which at present is not the case. But even amidst all our ignorance of these, it is surprising how small a portion of evil they would occasion if men obeyed the laws which are actually ascertained. How many ships perish from being sent to sea in an old worn-out condition, and ill-equipped, through mere acquisitiveness; and how many more, from captains and crews being chosen who are greatly deficient in knowledge, intelligence, and morality, in consequence of which they infringe the physical laws! The London *Courier*, of 29th April 1834, contains a list of ten British brigs of war, mostly employed as packet-ships, which had foundered at sea within the preceding

twelve years, owing to bad construction and bad condition; while, it is remarked, *not one American private packet-ship*, out of the vast number constantly sailing between Liverpool and New York, is recollected to have perished in that manner. Such facts show how little Nature is to blame for the calamities of shipwreck, and to how great an extent they arise from human negligence and folly. We ought to look to all these matters, before we complain of storms as natural institutions.

The last example of the mixed operation of the natural laws which I shall notice, is the result of the mercantile distress in 1825–6. I have traced the origin of that visitation to excessive activity of acquisitiveness, and a general ascendency of the animal and selfish faculties over the moral and intellectual powers. The punishments of these offences were manifold. The excesses infringed the moral law, and the chastisement for this was deprivation of the tranquil steady enjoyment that flows only from the moral sentiments, with severe suffering in the ruin of fortune and blasting of hope. These disappointments produced mental anguish and depression, which occasioned an unhealthy state of the brain. The action of the brain being disturbed, a morbid nervous influence was transmitted to the whole corporeal system; bodily disease was superadded to mental sorrow; and in some instances the unhappy sufferers committed suicide to escape from these aggravated evils. Under the organic law, the children produced in this period of mental depression, bodily distress, and organic derangement, will inherit weak bodies, and feeble and irritable minds—a hereditary chastisement for their fathers' transgressions.

In the instances now given, we discover the various laws acting in perfect harmony, and in subordination to the moral and intellectual laws. If our ancestors had not forsaken the supremacy of the moral sentiments, such fabrics as the houses in the Old Town of Edinburgh never would

have been built; and if the modern proprietors had returned to that law, and kept profligate and drunken inhabitants out of them, the conflagration might still have been avoided. In the case of the ships, we see that wherever intellect and morality have been relaxed, and animal motives permitted to assume the supremacy, evil has speedily followed; and that where the higher powers were called forth, safety has been obtained. And, finally, in the case of the merchants and manufacturers, we trace their calamities directly to placing acquisitiveness and self-esteem above intellect and moral sentiment.

Formidable and appalling, then, as these evils are, yet, when we attend to the laws under which they occur, and perceive that the object and legitimate operation of every one of those laws, when observed, is to produce happiness to Man, and that the sufferings have the tendency to force him back to happiness,—we cannot, under the supremacy of the moral sentiments and intellect, fail to bow in humility before them, as at once wise, benevolent, and just.

An important question remains for consideration—Can we *evade* the action of the natural laws? It appears to me that we cannot do so; but that, by intelligently obeying them, and availing ourselves of their action, we may do what superficial observers mistake for evading them. By employing a balloon, for example, we may rise in the air, although the law of gravitation appears to fix us to the earth; but in this case we, in point of fact, rise by the law of gravitation. The gases which compose the atmosphere are heavier than the hydrogen gas with which we fill the balloon, and the latter ascends in virtue of the same law which causes timber to float on the surface of the water. "About three years ago," says Mr Edwin Chadwick, "an epidemic raged in Glasgow, and there was scarcely a family, high or low, who escaped attacks from it. But at Glasgow they have an exceedingly well-appointed, well-ventilated prison, and in that prison there was not a single case of epidemic; and in

consequence of the overcrowding of the hospitals, which killed some two thousand people, they took forty cases into the prison, and not one of them spread." It may appear to some persons that the directors of this prison had found out the means of *evading* the organic law, and consequently of escaping from the infection of the fever; but this is a mistake. The organic law is, that fever infects only when the atmosphere is surcharged with noxious effluvia, and the bodies of those exposed to it are low in tone. In the prison, a good ventilation was maintained, and the prisoners were adequately fed. The spread of the infection, therefore, was warded off, not by evading, but by obeying the organic law. Captain Murray (mentioned on p. 137) maintained the crew of his ship in excellent health in the West Indies when the crews of other ships were dying around him, not by *evading*, but by *obeying* the organic laws. When Lord Exmouth saved the crew of the Dutton (see p. 318), he also succeeded by obeying the physical law. He used ropes to prevent himself and them from sinking in the waves.

It is unnecessary to enlarge on this topic. God, who instituted the natural laws, and attached certain consequences to obedience and disobedience, is too wise to have made inconsistent arrangements, too powerful to be baffled by human ingenuity, and too benevolent to render it credible that we shall benefit ourselves more by disobeying than by complying with His laws.

CHAPTER VIII.

INFLUENCE OF THE NATURAL LAWS ON THE HAPPINESS OF INDIVIDUALS.

A formidable objection has often been stated against the preceding views of the Natural Laws—namely, that although, when considered abstractly, they appear beneficent and just, yet, when applied to individuals, they are undeniably the causes of extensive, severe, and unavoidable suffering: that while, theoretically, the moral horizon seems to be cleared, nevertheless, practically and substantially, the obscurity and intricacy remain undiminished. In answer I observe, that, as the whole is but an aggregate of all the parts,—if any natural institution, when viewed in its effects in regard to the race, be just and beneficent, it cannot well be cruel and unjust to individuals, who are the component parts of that race; a proposition which I conceive admits of something approaching to demonstration. The form of a dialogue is perhaps the best adapted for illustrating the subject; and if, in imitation of some of the classic fabulists, we suppose the suffering individuals to make an appeal to Jupiter, the law of gravitation may be exemplified as follows:—

It happened in a remote period, that a slater slipped from the roof of a high building, in consequence of a stone of the ridge giving way as he walked upright along it; he fell to the ground, had a leg broken, and was otherwise severely bruised. As he lay in bed suffering severe pain from his

misfortune, he addressed Jupiter in these words: "O Jupiter, thou art a cruel god; for thou hast made me so frail and imperfect a being, that I had not faculties to perceive my danger, nor power to arrest my fall. It were better for me that I had never been." Jupiter, graciously bending his ear, heard the address, and answered, "Of what law of mine dost thou complain?" "Of the law of gravitation," replied the slater: "by its operation, my foot slipt from a stone, which, unknown to me, was loose; I was precipitated to the earth, and my body, never calculated to resist such violence, was severely injured." "I restore thee to thy station on the roof," said Jupiter; "I heal all thy bruises; and, to convince thee of my benevolence, I suspend the law of gravitation as to thy body and all that is related to it: art thou now content?"

The slater, in deep emotion, offered up grateful thanks, and expressed the profoundest reverence for so just and beneficent a deity. In the very act of doing so, he found himself in perfect health, erect upon the ridge of the roof; and, rejoicing, gazed around. His wonder at so strange an event having at last abated, he endeavoured to walk along the ridge to arrive at the spot which he intended to repair. But the law of gravitation was suspended, and his body did not press upon the roof. There being no pressure there was no resistance, and his legs moved backwards and forwards in the air without any progress being made by his body. Alarmed at this occurrence, he stooped, seized his trowel, lifted it full of mortar, and made the motion of throwing it on the slates; but the mortar, freed from the trowel, hung in mid air—the law of gravitation was suspended as to it also. Nearly frantic with terror at such unexpected novelties, he endeavoured to descend in order to seek relief; but the law of gravitation was suspended as to his body, and he hung poised at the level of the ridge, like a balloon in the air. He tried to fling himself down, to get rid of the uneasy sensation, but his body floated erect, and would not move downwards.

In an agony of consternation, he called once more upon Jupiter. The god, ever kind and compassionate, heard his cry and pitied his distress; and asked, "What evil hath befallen thee now, that thou art not yet content? Have I not suspended, at thy request, the law which made thee fall? Now thou art safe from bruises and from broken limbs; why, then, dost thou still complain?"

The slater answered: "In deep humiliation, I acknowledge my ignorance and presumption; restore me to my couch of pain, but give me back the benefits of thy law of gravitation."

"Thy wish is granted," said Jupiter in reply. The slater in a moment lay on his bed of sickness, endured the castigation of the organic law, was restored to health, and again mounted to the roof that had caused his recent suffering. He thanked Jupiter from the depths of his soul for the law of gravitation, with its numberless benefits; and applied his faculties to study and obey it during the remainder of his life. This study opened up to him new and delightful perceptions of the Creator's beneficence and wisdom, of which ne had never before even dreamed; and these views so excited and gratified his moral and intellectual powers, that he seemed to himself to have entered on a new existence. Ever afterwards he obeyed the law of gravitation; and, in a good old age, when his organic frame was fairly worn out by natural decay, he transmitted his trade, his house, and much experience and wisdom to his son,—and died, thanking and blessing Jupiter for having opened his eyes to the true theory of his scheme of creation.

The attention of Jupiter was next attracted by the loud groans and severe complaints of a husbandman, who addressed him thus: "O Jupiter, I lie here racked with pain, and pass the hours in agony without relief. Why hast thou created me so miserable a being?" Jupiter answered: "What aileth thee, and of what institution of mine dost thou complain?" "The earth which thou hast made,"

replied the husbandman, "will yield me no food, unless I till and sow it; and no increase, except it be watered by thy rain. While I guided my plough in obedience to thy law, thy rain came, and it fell not only on the earth, but also on me; it penetrated through the clothes which I had been obliged to make for myself, because thou hadst left me naked; it cooled my skin, which thou hadst rendered delicate and sensitive; it disordered all the functions of my body; and now rheumatic fever parches my blood, and agonizes every muscle. O Jupiter, thou art not a kind father to thy children."

Jupiter heard the complaint, and graciously replied: "My physical and organic laws were established for thy advantage and enjoyment, and thou hast grievously infringed them; the pain thou sufferest is intended to reclaim thee to thy duty, and I have constituted thy duty the highest joy of thy existence: but say, what dost thou desire?"

The husbandman answered: "What, O Jupiter, signify the purposes of thy laws to me, when thou hast denied me faculties competent to discover and obey them?—Frail and fallible as I am, they cause me only pain; deliver me from their effects, and I ask no other boon."

"Thy prayer is granted," said Jupiter: "I restore thee to perfect health; and, for thy gratification, I suspend the laws that have offended thee. Henceforth water shall not wet thee or thine, thy skin shall feel cold no more, and thy muscles shall never ache. Art thou now content?"

"Most gracious Jupiter," said the husbandman, "my soul is melted with deepest gratitude, and I now adore thee as supremely good."

While he spoke he found himself afield behind his team, healthful and vigorous, jocund and gay, and again blessed Jupiter for his merciful dispensation. The season was spring, when yet the chill blast of the north, the bright blaze of a powerful sun, and passing showers of rain, interchanged in quick and varying succession. As he drove his team along, the rain descended, but it wet not *him;* the sharp winds

blew, but they chilled no fibre in *his* frame; the flood of heat next poured upon his brow, but no perspiration started from its pores: the physical and organic laws were suspended as to him.

Rejoicing in his freedom from annoyance and pain, he returned gladly home to meet his smiling family, after the labours of the day. It had been his custom in the evening to put off the garments in which he had toiled, to clothe himself in fresh linen, to sup on milk prepared by his wife with savoury fruits and spices, and to press his children to his bosom with all the fervour of a parent's love; and he used to feel a thrill of pleasure pervading every nerve, as they acknowledged and returned the affectionate embrace.

He looked to find the linen clean, cool, delicately dressed, and lying in its accustomed place; but it was not there. He called to his wife to fetch it, half chiding her for neglect. With wonder and dismay depicted in every feature, she narrated a strange adventure. With the morning sun she had risen to accomplish her wonted duty, but, although the water wetted every thread that clothed other persons, it moistened not a fibre of his. She boiled it over a powerful fire, and applied every means that ingenuity, stimulated by affection, could devise; but the result was still the same: the water glided over his clothes, and would not wet them. "The physical law," said the husband within himself, "is suspended as to me; henceforth water wetteth not me or mine." He said no more, but placed himself at table, smiling over his lovely family. He lifted the youngest child upon his knee, a girl just opening in her bloom,—pressed her to his bosom, and kissed her ruddy cheek. But he started when he experienced no sensation. He saw her with his eyes, and heard her speak, but had no *feeling* of her presence. His knee was as stone, his bosom as marble, and his lips as steel; no *sensation* penetrated through his skin. He placed her on the floor, looked wistfully on her form, graceful, vivacious, and instinct with love; and, as if *determined* to enjoy the well-remembered pleasure, now withheld, he clasped

her to his bosom with an embrace so ardent that she screamed with pain. Still he was all adamant; no sensation was felt. Heaving a deep sigh, he sent her away, and again the thought entered the very depths of his soul—"The organic law is suspended as to me!" Recollecting well the sweet gratifications of his evening meal, he seized a bowl of milk, and began to sip, exciting every papilla of the tongue to catch the grateful savour. But no savour was perceptible; the liquid glided over his tongue like quicksilver over the smooth surface of a mirror, without impression, and without leaving a trace behind. He now started in horror, and his spirit sank within him when he thought that thenceforth he should live without sensation. He rushed into the fields, and called aloud on Jupiter; "O Jupiter, I am the most miserable of men; I am a being without sensation. Why hast thou made me thus?"

Jupiter heard his cry and answered: "I have suspended the physical and organic laws, to which thou didst ascribe thy fever and thy pain; henceforth no pang shall cause thy nerves to ache, or thy muscles to quiver: why, then, art thou thus unhappy, and why discontented with thy new condition?"

"True, O Jupiter," replied the husbandman; "but thou hast taken away from me sensation: I no longer feel the grateful breath of morn fanning my cheek as I drive my team afield; the rose diffuses its fragrance for me in vain; the ruddy grape, the luscious fig, and the cooling orange, to me are now savourless as adamant or air; my children are as stones: O Jupiter, I am utterly wretched; I am a man without sensation!"

"Unhappy mortal," replied the god, "how can I afford thee satisfaction? When I gave thee nerves to feel, and muscles to execute the purposes of thy mind,—when I bestowed on thee water to refresh thy palate, and made thy whole frame one great inlet of enjoyment,—thou wert not content. I made thy nerves liable to pain, to warn thee of thy departure from my laws. The rain that was sent fell to

fructify and refresh the earth, and not to injure thee. I saw thee, while the shower descended, stay abroad, regardless of its influence on thy frame. The northern blast received from me its piercing cold, to warn thee of its effects; and yet I saw thee, wet and shivering, stand in its course, regardless of its power. In the voice of the storm I spake to thy understanding, but thou didst not comprehend me. The fever that parched thy blood was sent to arrest thee in thy departures from my organic laws. If I restore thee to the benefit of my institutions, thou mayest again forget my ways, and in misery impeach my justice."

"O most gracious Jupiter," cried the husbandman, "now I see thy goodness and wisdom, and my own folly and presumption. I accept thy laws, and gratefully acknowledge that even in the chastisements they inflict they are beneficent. Restore to me the enjoyments of sensation; permit me once more to reap the advantages that flow from the just uses of my nerves and muscles, and I bow with resignation to the punishment of misapplying them." Jupiter granted his request. His fever and pains returned, but by medicine he was relieved. He slowly recovered health and strength, and never afterwards embraced his children, or enjoyed a meal, without pouring forth a deeper offering of gratitude than he had done before. He was now instructed concerning the sources of his enjoyments; he studied the laws of his nature and obeyed them; and when he suffered for occasional deviations, he hastened back to the right path, and never again underwent so severe a punishment.

Just as the husbandman resumed his wonted labours, a new voice was heard calling loudly to Jupiter for relief. It proceeded from a young heir writhing in agony, who cried—"O Jupiter, my father committed debaucheries, for which my bones are pierced with aching pains; gout teareth my flesh asunder; thou actest not justly in punishing me for his transgressions: deliver me, O Jupiter, or renounce thy character for benevolence and justice!" "Thou complainest

of my law of hereditary descent?" said Jupiter; "hast thou derived from thy father any other quality besides liability to gout?" "Doubtless, O Jupiter," replied the sufferer, "I have derived nerves that feel sweet pleasure when the gout ceaseth its gnawing, muscles that execute the purposes of my will, senses that are inlets of joy, and faculties that survey and rejoice in thy fair creation: But why didst thou permit gout to descend from him who sinned to me?"

"Shortsighted mortal," said Jupiter, "thy father was afflicted because he infringed my institutions; by my organic law thou hast received a frame constituted as was that of thy father when thy life commenced; the delicate sensibility of his nerves transmitted the same susceptibility to thine; the vigour of his muscles has been transferred into thine; and by the same law, the liability to pain that existed in his bones from debauchery, constitutes an inseparable element of thine: If this law afflict thee, speak the word, and I shall suspend it as to thee."

"Bountiful Jupiter!" exclaimed the sufferer; "but tell me first—if thou suspendest thy law, shall I lose all that I inherited by it from my father; vigour of nerves, muscles, senses, and faculties, and all that constitutes my delight when the gout afflicteth me not?"—"Assuredly thou shalt," said Jupiter; "but thy body will be free from pain."

"Forbear, most bounteous deity," replied the sufferer; "I gratefully accept the gift of thy organic laws, with all their chastisements annexed: But say, O Jupiter, if this pain was inflicted on my father for transgressing thy law, may it not be lessened or removed if I obey?"

"The very object of my law," said Jupiter, "is that it should be lessened. Hadst thou proceeded as thy father did, thy whole frame would have become one great centre of disease. The pain was transmitted to thee to guard thee by a powerful monitor from pursuing his sinful ways, that thou mightst escape this greater misery. Follow a course in accordance with my institutions, and then thy pain shall abate, and thy children shall be free from its effects."

The heir expressed profound resignation to the will of Jupiter, blessed him for his organic law, and entered on a life of new and strict obedience. His pain in time diminished, and his enjoyments increased. Ever after he was grateful for the law.

A feeble voice next reached the vault of heaven: it was that of an emaciated young woman, sick and in pain. "What is thy distress," said Jupiter, "and of what dost thou complain?" Half drowned in sighs, the feeble voice replied: "I suffer under thy organic law. A father's sickness and the disorders of a mother's frame have been transmitted in combined intensity to me. I am all over exhaustion and pain." "Hast thou received no other gift," inquired Jupiter, "but sickness and disease—no pleasure to thy nerves, thy muscles, or thy mental powers?" "All are so feeble," replied the girl, "that I exist, not to enjoy, but only to suffer." "Poor victim," said Jupiter, "my organic law shall soon deliver thee; I will take thee to myself, and thy sufferings shall cease for ever."

The next prayer was addressed by a merchant struggling on the Mediterranean waves, and nearly sinking in their foam. "What evil dost thou charge against me," said Jupiter, "and what dost thou require?"

"O Jupiter," answered the supplicant, "I sailed from Tyre to Rome in a ship, which thou seest on fire, loaded with all the merchandise acquired by my previous toils. As I lay here at anchor off the port of Syracuse, whither business called me, a sailor, made by thee, thirsted after wine, stole it from my store, and, in intoxication, set my ship and goods on fire; and I am now plunged in the waves to die by drowning, to escape the severer pain of being consumed by fire. Why, if thou art just, should the innocent thus suffer for the guilty?"

"Thou complainest, then," said Jupiter, "of my social law? Since this law displeaseth thee, I restore thee to thy ship, and suspend it as to thee."

The merchant in a moment saw his ship entire; the blazing embers restored to vigorous planks; himself and all his crew sound in limb, and gay in mind, upon her deck. Joyous and grateful, he addressed thanksgiving to the god, and called to his crew to weigh the anchor, set the sails, and turn the helm for Rome. But no sailor heard him speak, and no movement followed his words. Astonished at their indolence and sloth, he cried in a yet louder voice, and inquired why none obeyed his call. But still no answer was given. He saw the crew move and speak, act and converse; but they seemed not to heed *him*. He entreated, remonstrated, and upbraided, but, notwithstanding all his efforts, could obtain no reply. All seemed regardless of his presence. Regardless of his presence! The awful thought rushed into his mind, that the social law was suspended as to him. He now saw, in all its horror, the import of the words of Jupiter, which before he had not fully comprehended. Terrified, he seized a rope, and set a sail. Every physical law was in force, and obeyed his will. The sail filled, and strained forward from the mast. He ran to the helm—it obeyed his muscles, and the ship moved as he directed it. But its course was short; the anchor stopped its progress in the sea. He lowered the sail, seized a handspike, and attempted to weigh it; but in vain. The strength of five men was required to raise so ponderous a mass of iron. Again he called to his crew; but again he found that the social law was suspended as to him: he was absolved from all suffering caused by the misconduct of others, but he was cut off from every enjoyment and advantage derivable from their assistance.

In despair he seized the boat, rowed into the port of Syracuse, proceeded straight to the house of his commercial correspondent, and begged his aid to deliver him from the apathy of his crew. He saw his friend, addressed him, and told him of his fruitless endeavours to leave the anchorage; but his friend was quite inattentive to his speeches. He did not even look upon him, but proceeded in business

of his own, with which he seemed entirely occupied. The merchant, fatigued by his exertions, and almost frantic with alarm, hurried to a tavern on the quay, where he used to dine; and, entering, called for wine to recruit his exhausted strength. But the servants seemed unconscious of his presence; no movement was made; and he remained as if in a vast solitude, amidst large companies of merchants, servants, and assistants, who all bustled in active gaiety, each fulfilling his duty in his own department. The merchant now comprehended fully the horrors of his situation, and called aloud to Jupiter—"O Jupiter, death in the waves, or by consuming flame, was better than the life thou hast assigned to me. Let me die, for my cup of misery is full beyond endurance; or restore me to the enjoyments of thy social law, and I shall cease to complain of the pains which it inflicts."

"But," said Jupiter, "if I restore to thee my social law, thy ship will be consumed, thou and thy crew will escape in a boat, but thou shalt be a very beggar; and, in thy poverty, thou wilt upbraid me for dealing unjustly by thee."

"O bountiful Jupiter," replied the merchant, "I never knew till now what enjoyments I owed to thy social law; how rich it renders me, even when all else is gone; and how poor I should be, with all the world for a possession, if denied its blessings. True, I shall be poor; but my nerves, muscles, and mental powers will be left me: now I see that employment of these is the only pleasure of existence; poverty will not cut me off from exercising them in obedience to thy laws, but will rather add new motives to excite me to do so. Under thy social law, the sweet voice of friendship will cheer me in adversity, the aid of kindred companions will soothe the remainder of my days! And now that I see thy designs, I shall avoid employing my fellow-men in situations unsuitable to their talents, and thereby shall escape the penalties of infringing thy social law. Most merciful Jupiter, restore me to the benefit of all thy laws, and I accept the penalties attached to their infringement." His

request was granted; his ship was consumed, but he escaped in the boat, and ever afterwards made Jupiter's laws and the nature of Man his study; he obeyed those laws, became moderately rich, and found himself happier than he had ever been in his days of selfishness and ignorance.

Jupiter was assailed with many other prayers from unfortunate sufferers under the effects of infringement of his laws; but, instead of hearing each in endless succession, he assembled his petitioners, and introduced to them the slater, the husbandman, the young heir, and the merchant, whom he requested to narrate to the supplicants their knowledge and experience of the natural laws; and he intimated, that if, after listening to their account, any petitioner should still be dissatisfied with his condition, he would suspend for him the particular law which caused his discontent. But no application followed. Jupiter saw his creatures employ themselves with earnestness in studying and conforming to his institutions, and ever afterwards they offered up to him only gratitude and adoration for his infinite wisdom and goodness.

CHAPTER IX.

CONCLUSION.

It has frequently been asked, What is the practical use of Phrenology, even supposing it to be true? A few observations will suffice to answer this inquiry, and, at the same time, to present a brief summary of the doctrine of the preceding work.

Before the age of Copernicus, the earth and sun presented to the eye phenomena exactly similar to those which they now exhibit; but their motions appeared in a very different light to the understanding.

Before the age of Newton, the revolutions of the planets were known as matter of fact; but mankind were ignorant of the principle of their motions.

Previously to the dawn of modern chemistry, many of the qualities of substances were ascertained by observation; but their ultimate principles and relations were not understood.

Knowledge, as I observed in the Introduction, may be made beneficial in two ways—either by rendering the thing discovered directly subservient to human enjoyment; or, where this is impossible, by enabling Man to modify his conduct in harmony with its qualities. While knowledge of any department of nature remains imperfect and empirical, the unknown qualities of the objects comprehended in it may render abortive our efforts either to apply those which are known, or to act in accordance with them. Hence it is only after the qualities and modes of action of things have

been discovered, their relations ascertained, and this knowledge systematised, that science can attain its full character of utility. The merits of Copernicus and Newton consist in having rendered this service to astronomy.

Before the appearance of Gall and Spurzheim, mankind were practically acquainted with the feelings and intellectual operations of their own minds, and anatomists knew the appearances of the brain. But the science of mind was very much in the same state as that of the heavenly bodies before the times of Copernicus and Newton.

First, No unanimity prevailed among philosophers concerning the elementary feelings and intellectual powers of Man. Individuals deficient in conscientiousness, for instance, denied that the sentiment of justice is a primitive mental quality: others, deficient in veneration, asserted that Man is not naturally prone to worship, and ascribed religion to the invention of priests.

Secondly, The extent to which the primitive faculties differ in strength, in different individuals, was matter of dispute, or of vague conjecture; and concerning many qualities there was no agreement among philosophers whether they were gifts of Nature or the results of mere cultivation.

Thirdly, Different modes or states of the same feeling were often mistaken for different feelings; and modes of action of all the intellectual faculties were mistaken for distinct faculties.

Fourthly, The brain, confessedly the most important organ of the body, and that with which the nerves of the senses, of motion, and of feeling communicate, had no ascertained functions. Mankind were ignorant of its uses, and of its influence on the mental faculties.

If, in physics, imperfect and empirical knowledge renders the unknown qualities of bodies apt to frustrate the efforts of Man to apply or to accommodate his conduct to their known qualities,—and if science becomes useful only in proportion as it attains to a complete and systematic exhibition of ultimate principles and their relations,—the same doctrine

applies with equal or greater force to the philosophy of mind.

The science of Politics embraces forms of government, and the relations between different States. All government is designed to combine the efforts of individuals, and to regulate their conduct when united. To arrive at the best means of accomplishing this end, systematic knowledge of the nature of Man seems to be highly important. A despotism, for example, may restrain some abuses of the propensities, but it assuredly impedes the exercise of reflection, and others of the highest and noblest powers. A form of government can be suited to the nature of Man, only when it is calculated to permit the legitimate use, and to restrain the abuses, of all his mental feelings and capacities: and how can such a government be devised, while these faculties, with their spheres of action and external relations, are imperfectly known? Again, all relations between different States must also, to prove permanently beneficial, be in accordance with the nature of Man; and the question recurs, How are these to be framed while that nature is a matter of conjecture? Napoleon disbelieved in a sentiment of justice as an innate quality of the mind, and, in his relations with other States, relied on fear and interest as the grand motives of conduct: but that sentiment existed, and, in combination with other faculties which he outraged, prompted Europe to hurl him from his throne. If Napoleon had comprehended the principles of human nature, and the relations of these, as forcibly and clearly as he did the principles of mathematics, in which he excelled, his understanding would have greatly modified his conduct, and Europe would have escaped numerous calamities.

Legislation, civil and criminal, is intended to regulate and direct the human faculties in their efforts at gratification; and laws, to be useful, must accord with the constitution of these faculties. But how can salutary laws be enacted, while the subject to be governed, or human nature, is not accurately understood? The inconsistency and intricacy of

the laws, even in enlightened nations, have afforded themes for the satirist in every age;—yet how could the case be otherwise? Legislators provided rules for directing the qualities of human nature, which they conceived themselves to know; but either error in their conceptions, or the effects of other qualities unknown or unattended to, defeated their intentions. The law, for example, that punished heresy with burning, was addressed by our ancestors to cautiousness and the love of life; but intellect, veneration, conscientiousness, and firmness, were omitted in their estimate of human principles of action—and these set the law at defiance. There are many laws still in the statute-book equally at variance with the nature of Man.*

Education is intended to enlighten the intellect, to train it and the moral sentiments to vigour, and to repress the too great activity of the selfish feelings. But how can this be successfully accomplished, when the faculties and sentiments themselves, the laws to which they are subject, and their relations to external objects, are unascertained? Accordingly, the theories and practices in education are innumerable and contradictory; which could not happen if men knew the constitution and relations of the object which they were training.

In an *Essai sur la Statistique morale de la France*, by Mons. A. M. Guerry, published at Paris in 1833, it is stated that crimes against property and person are most numerous, in proportion to the population, in those departments of France—the north and east—in which the people are the best educated, the richest, and the most industrious. This must be owing partly to the increased power which education confers of doing either good or evil, and partly to defects in the education afforded.

M. Guerry's statement, however,—supposing it to be

* See an example of Phrenology applied to Legislation, in "Essays on Human Rights and their Political Guaranties," by the Hon. E. P. Hurlbut, late one of the Judges of the Supreme Court of the State of New York. Reprinted at Edinburgh, 1847.

grounded on sufficient data,—does not show that education tends to increase rather than diminish crime; for, as a writer in the *Phrenological Journal* observes, "until it be proved that education has the same kind of subjects to operate on in every part of France, its effects cannot be judged of from such data as those furnished by M. Guerry." There is good reason to believe that the generality of heads are better in some parts of France than in others. "Now," says the writer, "this important fact ought not to be overlooked, as it has hitherto been, in judging of the influence of education: for it can hardly be doubted, that educated but inferior minds will display less morality than minds which are uneducated but naturally much superior. What should we say of a man who called in question the efficacy of medical treatment, because a patient tainted from birth with consumption, and who had long been under the care of a physician, was not so healthy as a person with naturally sound lungs, who had never taken medical advice in his life? But for the treatment, the consumptive man would have been much worse than he actually was, and probably would have died in early youth. To judge correctly, therefore, of the question at issue, we must compare the present amount of crime in particular departments of France, with its amount *in the same departments* when there was either very little instruction or none at all. In this manner we shall also avoid being misled by the effects of other influences; such as the density or thinness of the population,—the employment of the people in agriculture or manufactures,—and their residence on the coast, in the interior, or in the mountainous or fertile districts. Were such a trial made, I think it would almost without exception be found, in cases where no great change of circumstances had occurred, that in exact proportion to the increase of education, there had been a diminution of crime. I am well aware that, by the system of instruction generally pursued, the moral feelings, which restrain from crime, are wholly neglected: but cultivation even of the intellect appears favourable to morality; first, by giving

periods of repose to the lower propensities, of whose excessive activity crime is the result; secondly, by promoting the formation of habits of regularity, subordination, and obedience; and, thirdly, by strengthening and informing the intellect, and thereby enabling it to see more clearly the dangerous consequences of crime. No doubt there are criminals on whom an excellent intellectual education has been bestowed; but instead of thence inferring that education increases the liability of mankind to crime, I think it may with great reason be asked, whether, had the same individuals wanted education altogether, their crimes would not have been more atrocious?"*

Where the philosophy of Man is unknown, children are not taught any rational views of the order of God's providence on earth, nor are they trained to venerate and obey it; they are not instructed in the constitution of society, and obtain no sufficient information concerning the real sources of individual enjoyment and social prosperity. They are not taught any system of morals based on the nature of Man and his social relations, but are left each to grope his way to happiness, guided by creeds and catechisms, which they see many men neglecting in their actions. The poor observe the rich pursuing pleasure and fashion, and if they follow such examples they must resort to crime for the means of gratification. No solid instruction is given them, sufficient to satisfy their understandings that the rich themselves are straying from the paths that lead to happiness, and that it is to be found only in other and higher occupations.

Morals and Religion cannot assume a systematic and thoroughly practical character, until the elementary faculties of the mind, and their relations to the external creation, be discovered and taught.

It is presumable that the Deity, in creating these powers and the external world, really adapted the one to the other; and that individuals and nations, in obeying the dictates of the natural laws, must, in every instance, be promoting their

* Phrenological Journal, vol. ix. p. 268.

best interests, while, in departing from them, they must be sacrificing these to passion or to illusory notions of advantage. But, until the nature of Man, and the relationship between it and the external world, shall be scientifically ascertained and systematically expounded, it will be impossible to support morality by the powerful demonstration that interest coincides with it, and to render religion practical by showing that all nature is in harmony with the sentiment of veneration in the mind. The tendency in most men to view expediency as not always coincident with justice, affords a striking proof of the limited knowledge of the constitution of Man and the external world still existing in society.

The PROFESSION, PURSUITS, HOURS OF EXERTION, and AMUSEMENTS of individuals, should also bear reference to their physical and mental constitution; but hitherto no guiding principle has been possessed, to regulate practice in these important particulars—another evidence that the science of Man has been unknown.

In consequence of the want of a philosophy of Man, there is little harmony between the different departments of human pursuit. God is one; and as He is intelligent, benevolent, and powerful, we may reasonably conclude that creation is one harmonious system, in which the physical is adapted to the moral, the moral to the physical, and every department of these grand divisions to the whole. But at present, many principles clearly revealed by philosophy are impracticable, because the institutions of society have not been founded with due regard to their existence. An educated lady, for example, and a member of one of the learned professions, may possess the clearest conviction that God, by the manner in which he has constituted the body, and connected the mind with the brain, has positively enjoined muscular exertion, as indispensable to the possession of sound health, the enjoyment of life, and the rearing of a healthy offspring; and, nevertheless, they may find themselves so hedged round by routine of employment, the fashions of society, the influence of opinion, and the positive absence of all arrange-

ments suited to the purpose, that they may be rendered nearly as incapable of yielding this obedience to God's law as if they were imprisoned in a dungeon.

By Religion we are commanded not to permit ourselves to be engrossed with the cares of this world, but to seek godliness, and to eschew selfishness, contention, and the vanities of life. These precepts must have been intended to be practically followed, else it was a mockery to give them forth. But if they are practicable, the inherent constitution of Man, and that of the world, must have been arranged in such a manner as to admit of their being obeyed—and not only so, but to render men happy in proportion as they should practise, and miserable as they should neglect them. Nevertheless, when we survey human society in the forms in which it has hitherto existed, and in which it now exists, these precepts appear to have been, and to be now, absolutely impracticable to ninety-nine out of every hundred of civilised men. Suppose the most eloquent and irresistibly convincing discourse on the Christian duties to be delivered on Sunday to a congregation of Manchester manufacturers and their operatives, or to London merchants, Essex farmers, or Westminster lawyers, how would they find their respective spheres of life adapted for *acting* on their convictions? They are all commanded to love God with their whole heart and soul, and to resist the world and the flesh; that is to say, to support their moral affections and intellectual powers in habitual activity,—to direct them to noble, elevating, and beneficial objects,—and to resist the subjugation of these higher attributes of their minds to animal pleasure, sordid selfishness, and worldly ambition. The moral and intellectual powers assent to the reasonableness of these precepts, and rejoice in the prospect of their practical application; but, on Monday morning, the manufacturers, owing to the institutions of society, and the department of life into which their lot has been cast before they had either reason or moral perception to direct their choice, must commence a course of ceaseless toil,—the workmen that they may support life, and the

masters that they may avoid ruin or accumulate wealth. Saturday evening finds them worn out with mental and bodily exertion, continued through all the intermediate days, and directed to pursuits connected with this world alone. Sunday dawns upon them in a state of mind widely at variance with the Christian condition. In like manner, the merchant must devote himself to his bargains, the farmer to his plough, and the lawyer to his briefs; so that their moral powers have neither objects presented to them, nor vigour left for enjoyments befitting their nature and desires.

It is in vain to say to individuals that they err in acting thus: individuals are carried along in the great stream of social institutions and pursuits. The operative labourer is compelled to follow his routine of toil under pain of absolute starvation. The master-manufacturer, the merchant, the farmer, and the lawyer, are pursued by competitors so active, that if they relax in selfish ardour, they will be speedily plunged into ruin. If God has so constituted the human mind and body, and so arranged external nature, that all this is unavoidably necessary for Man, then the Christian precepts are scarcely more suited to human nature and circumstances in this world, than the command to fly would be to the nature of the horse. If, on the other hand, Man's nature and circumstances do in themselves admit of the Christian precepts being realised, it is obvious that before this can be accomplished, a great revolution must take place in our notions, principles of action, practices, and social institutions. That many Christian teachers believe this improvement possible, and desire its execution, I cannot doubt; but through want of knowledge of the constituent elements of human nature, and their relations,—through want, in short, of a philosophy of mind and of physical nature,—they have never been able to perceive what God has rendered Man capable of attaining,—how it may be attained,—or on what principles the moral and physical government of the world in regard to Man is conducted. Consequently, they have not acted generally on the idea of

religion being a branch of an all-comprehending philosophy; they have relied chiefly on inculcating the precepts of their Master, threatening future punishment for disobedience, and promising future rewards for observance,—without proving philosophically to society, not only that its institutions, practices, and principles must be erected on loftier ground than they are at present before it can become truly Christian,—but that these improvements are actually within the compass of human nature and human knowledge. Persons in whom there is a strong aspiration after the realisation of the Christian state of society, but whose intellects cannot perceive any natural means by which it can be produced, take refuge in the regions of prophecy, and expect a miraculous reign of saints in the Millennium. How much more profitable would it be to study the philosophy of Man's nature, which is obviously the work of God, and to endeavour to introduce morality and happiness by the means appointed by Him in creation!

We need only attend to the scenes daily presenting themselves in society, to obtain an irresistible conviction that many evil consequences result from the want of a true theory of human nature and its relations. Every preceptor in schools—every professor in colleges—every author, editor, and pamphleteer—every member of Parliament, councillor, and judge—has a set of notions of his own, which, in his mind, holds the place of a system of the philosophy of Man; and although he may not have methodised his ideas, or have even acknowledged them to himself as a theory, yet they constitute a standard to him by which he judges of all questions in morals, politics, and religion: with unhesitating dogmatism he advocates whatever views coincide with them, and condemns all that differ from them. Each also despises the notions of his fellows, in so far as they differ from his own. In short, the human faculties too generally operate simply as impulses, exhibiting all the conflict and uncertainty of mere feeling, unenlightened by perception of their own nature and objects. Hence, public measures in general,

whether relating to education, religion, trade, manufactures, the poor, criminal law, or any other subject linked with the dearest interests of society,—instead of being treated as branches of one general system of economy, and adjusted on scientific principles each in harmony with all the rest, are supported, or opposed, on narrow and empirical grounds, and often call forth displays of ignorance, prejudice, selfishness, intolerance and bigotry, that greatly obstruct the progress of improvement. Indeed, any important approach to unanimity, even among intelligent and virtuous men, will be impossible, so long as the order of nature is not acknowledged as an authoritative guide to individual feelings and perceptions.

If, then, the doctrine of the natural laws here expounded be true, it will, when matured, supply the deficiencies now pointed out.

But how are the views explained in this work, supposing them to contain some portion of truth, to be rendered practical? Sound views of human nature and of the Divine government come home to the feelings and understandings of men; they perceive them to possess a reality which rivets attention and commands respect. If the doctrine unfolded in the present treatise be in any degree true, it is destined to operate on the character of legislation, on practical conduct, and on public instruction,—especially that from the pulpit. Persons who have embraced the views which it contains, inform me that many sermons appear to them inconsistent in their different propositions, at variance with sound views of human nature, and so vague as to have little relation to practical life and conduct. They partake of the abstractedness of the scholastic philosophy. The first divine of comprehensive intellect and powerful moral feelings who shall take courage to introduce the natural laws into his discourses, and teach the people the works and institutions of the Creator, will reap a great reward in usefulness and pleasure. If this course shall, as heretofore, be neglected, the people, who are daily increasing in knowledge

of philosophy and practical science, will, in a few years, look with disrespect on their clerical guides, and probably force them, by "pressure from without," to remodel the entire system of pulpit-instruction.*

The institutions and manners of society indicate the state of mind of the influential classes at the time when they prevail. The trial and burning of old women as witches point out clearly the predominance of destructiveness and wonder over intellect and benevolence, in those who were guilty of such cruel absurdities. The practices of wager of battle, and ordeal by fire and water, indicate great activity of combativeness, destructiveness, and veneration, in those who permitted them, combined with lamentable ignorance of the natural constitution of the world. In like manner, the enormous sums willingly expended in war, and the small sums grudgingly paid for public improvements,—the intense energy displayed in the pursuit of wealth, and the general apathy evinced in the search after knowledge and virtue,—unequivocally proclaim activity of combativeness, destructiveness, acquisitiveness, self-esteem, and love of approbation, with comparatively moderate vivacity of benevolence and conscientiousness in the present generation. Before, therefore, the practices of mankind can be altered, the state of their minds must be changed. It is an error to impose on a people institutions greatly in advance of their mental condition. The rational method is, first to instruct the intellect, then to interest the sentiments, and, last of all, to form arrangements in harmony with these faculties, and resting on them as their basis.

The principles developed in the preceding chapters, if founded in nature, may be expected to lead to considerable changes in many of the customs and pursuits of society; but, to accomplish this effect, these must first be ascertained to be true; next they must be sedulously taught; and only

* Since this was written, many preachers have occasionally introduced into their sermons pointed references to the natural laws of God. See examples in the APPENDIX, No. I.—ED.

thereafter can they be practically applied. It appears to me that a long series of years will probably elapse before even nations now regarded as civilised will model their institutions and manners in harmony with the natural laws.

The first step should be to teach these laws to the young. Their minds, not being occupied by prejudice, will recognise them as congenial to their constitution; the first generation that shall embrace them from infancy will proceed to modify the institutions of society into accordance with their dictates; and in the course of ages, they may at length be found to be practically useful. A perception of the importance of the natural laws will lead to their observance, and this will be attended by an increase of physical prosperity, a higher morality, and, in process of time, an improved development of brain, increasing the desire and capacity for further progress. All true theories have ultimately been adopted, and influenced practice; and I see no reason to fear that the present, if true, will prove an exception. The failure of all previous systems is the natural consequence of their having been unfounded; if this resemble them, it deserves, and assuredly will meet, a similar fate.

The present work may be regarded as, in one sense, an introduction to an essay on education. If the views unfolded in it are in general sound, it will follow that education has scarcely yet commenced. If the Creator has bestowed on the body, on the mind, and on external nature, determinate constitutions, and has arranged them to act on each other, and to produce happiness or misery to Man according to certain definite principles,—and if this action goes on invariably, inflexibly, and irresistibly, whether men attend to it or not,—it is obvious that the very basis of useful knowledge must consist in an acquaintance with these natural arrangements;—and that education will be valuable in the exact degree in which it communicates such information, and trains the faculties to act upon it. Reading, writing, and arithmetic, which make up the instruction generally enjoyed by the lower orders, are merely *means of*

acquiring knowledge, but do not *constitute* it. Greek, Latin, and Mathematics, which are added in the education of the middle and upper classes, are still only *means* of obtaining information: hence, with the exception of the few who pursue physical science, society dedicates very little attention to the study of the natural laws. And even those who do study science, disconnect it from the moral and religious sentiments, and thus allow more than half of its beneficial influence on human conduct to be lost.

In attempting to give effect to the views now discussed, I respectfully recommend that each individual, according as he becomes acquainted with the natural laws, should obey them, and communicate his experience of their operations to others; avoiding, at the same time, the subversion, by violence, of established institutions, and all outrages on public sentiment by intemperate discussions. The doctrines here unfolded, if true, authorise us to predict that the most successful method of ameliorating the condition of mankind will be that which appeals most directly to their moral sentiments and intellect; and I may add, from experience and observation, that, in proportion as any one becomes acquainted with the real constitution of the human mind, will his conviction of the efficacy of this method increase.

Finally, if it be true that the natural laws must be obeyed as a preliminary condition to happiness in this world, and if virtue and happiness be inseparably allied, the religious instructors of mankind may one day discover, in the general and prevalent ignorance of these laws, a reason of the limited success which has hitherto attended their efforts to improve the condition of mankind; and they will perhaps perceive it to be not inconsistent with their sacred office, to instruct men in the natural institutions of the Creator, as well as in Scripture, and to recommend obedience to both. The clergy exercise so vast an influence over the best members of society, that their countenance may hasten, or their opposition retard, by a century, the general adoption of the natural laws as guides to human conduct.

If the excessive toil of the manufacturer be inconsistent with that elevation of the moral and intellectual faculties of Man which is commanded by religion, and if the moral and physical welfare of mankind be not at variance with each other (which they cannot be), the institutions of society out of which the necessity for that labour arises must be pernicious to the interests of the State as a political body, and to the temporal welfare of the individuals who compose it; and whenever we shall be in possession of a correct knowledge of the elements of human nature, and of the principles on which God has constituted and governs the world, the *evidence* that these practices are detrimental to *our temporal welfare* will be as clear as that of their inconsistency with our religious duties. Until, however, divines shall become acquainted with this relation between philosophy and religion, they will not possess adequate means of rendering their precepts practical in this world; they will not carry the intellectual perceptions of their hearers fully along with them; they will be incapable of controlling the force of the animal propensities; and they will never lead society to the fulfilment of its highest destinies.

At present, the animal propensities are fortified in the strong entrenchments of social institutions: Acquisitiveness, for example, is protected and fostered by our arrangements for accumulating wealth; a worldly spirit, by our constant struggle to obtain the means of subsistence; pride and vanity, by our artificial distinctions of rank and fashion; and combativeness and destructiveness, by our warlike professions. The divine assails the vices and inordinate passions of mankind by the denunciations of the gospel; but as long as society shall be animated by different principles, and maintain in vigour institutions whose spirit is diametrically opposite to its doctrines, so long will it be difficult for him to effect the realisation of his precepts in practice. Yet it appears to me, that, by teaching mankind the philosophy of their own nature and of the world in which they live—by proving to them the harmony between the order of God's

secular providence and Christian morality, and the inconsistency of their own practices with both—they may be induced to modify the latter, and to give the moral powers the predominance in social institutions; and then the triumph of virtue and religion will be more complete.

Those who advocate the exclusive importance of spiritual religion for the improvement of mankind, appear to me to err in overlooking too much the necessity for complying with the natural conditions on which all improvement depends; and I expect, that when schools and colleges shall expound the various branches of science as elucidations of the order of God's providence for the guidance of human conduct on earth,—when the pulpit shall deal with the same principles, show their practical application to Man's duties and enjoyments, and add the sanctions of religion to enforce the observance of the natural laws,—and when the busy scenes of life shall be so arranged as to become a field for the practice at once of philosophy and of religion,—then will Man assume his station as a rational being, and Religion will achieve her triumph.

APPENDIX.

No. I.—Opinions of Divines respecting the Natural Laws.

Text, p. 15.

The Rev. James Buchanan, D.D., Divinity Professor in the New College, Edinburgh, observes that "the existence of 'natural laws,' and the operation of 'second causes,' are often explicitly recognised, and always obviously implied, in Scripture. . . . The Bible," says he, "speaks both of natural objects possessing peculiar properties and powers, and also of natural laws, as God's 'ordinances,' both in the heavens and the earth, but speaks nevertheless of a presiding Providence or governing Will, without ever supposing that the two are incompatible or mutually exclusive." And he thinks that "a right apprehension of the properties and powers belonging to created beings, and of the laws to which they are severally subject, will be found to conduce largely to a clear and comprehensive view of the relation which God sustains to His works."—*Faith in God and Modern Atheism compared*, vol. ii. pp. 138, 140; Edin. 1855.

The Rev. Charles Kingsley, now Professor of Modern History in the University of Cambridge, says:—"When a judge gives judgment, he either acquits or condemns the accused person; he gives the case for the plaintiff, or for the defendant: the punishment of the guilty person, if he be guilty, is a separate thing, pronounced and inflicted afterwards. His judgment, I say, is his *opinion* about the person's guilt, and even so God's judgments are the expression of His opinion about our guilt. But there is this difference between Man and God in this matter—a human judge gives his opinion in words, God gives His in *events;* therefore there is no harm for a human judge, when he has told a person why he must punish, to punish him in some way that has nothing to do with his crime—for

instance, to send a man to prison because he steals, though it would be far better if criminals could be punished in kind, and if the man who stole could be forced either to make restitution, or work out the price of what he stole in hard labour. For this is God's plan—God always pays sinners back in kind, that He may not merely punish them, but *correct* them ; so that by the kind of their punishment, they may know the kind of their sin. God punishes us, as I have often told you, not by His caprice, but by His laws. He does not *break His laws* to harm us; the laws themselves harm us, when we break them and get in their way. It is always so, you will find, with great national afflictions. I believe, when we know more of God and His laws, we shall find it true even in our smallest private sorrows. God is unchangeable; He does not lose His temper, as heathens and superstitious men fancy, to punish us. He does not change His order to punish us. *We* break His order, and the order goes on in spite of us, and crushes us ; and so we get God's judgment, God's opinion of our breaking His laws. You will find it so almost always in history. . . . Again, famines come by a nation's own fault—they are God's plainly-spoken opinion of what *He* thinks of breaking His laws of industry and thrift, by improvidence and bad farming. So when a nation becomes poor and bankrupt, it is its own fault ; that nation has broken the laws of political economy which God has appointed for nations, and its ruin is God's judgment, God's plain-spoken opinion again of the sins of extravagance, idleness, and reckless speculation.

"So with pestilence and cholera. They come only because we break God's laws ; as the wise poet well says,

> 'Voices from the depths *of Nature* borne,
> Which vengeance on the guilty head proclaim.'

—'Of nature ;' of the order and constitution which God has made for this world we live in, and which, if we break them, though God in His mercy so orders the world that punishment comes but seldom even to our worst offences, yet surely do bring punishment sooner or later if broken, in the common course of nature. Yes, my friends, as surely and naturally as drunkenness punishes itself by a shaking hand and a bloated body, so does filth avenge itself by pestilence. Fever and cholera, as you would expect them to be, are the expression of God's judgment, God's opinion, God's handwriting on the wall against us for our sins of filth and laziness, foul air, foul food,

foul drains, foul bedrooms. Where they are, there is cholera. Where they are not, there is none, and will be none, because they who do not break God's laws, God's laws will not break them."—*Who causes Pestilence? Four Sermons, by the Rev. Charles Kingsley, Rector of Eversley*, pp. 13–15; Lond. 1854.

The Rev. Dr Robert Lee says:—"St Paul denounces a 'science *falsely* so called;' shall we, therefore, be so simple as to reject science which is justly so called? thus fostering—under pretence of fearing—that dangerous scepticism which will not believe that 'facts of Nature are the words of God.' Thus, through apprehension of infidelity, men may rush into the grossest forms of atheism; virtually denying that the creatures are God's creatures; that this world is God's dominion; that its laws are His institutions; that His glory shines in every part—His praise is re-echoed from every side; and that Man is consecrated to be a priest, to offer up all the creatures as sacrifices of praise, acceptable to God through Jesus Christ—the great High Priest, in the Holy and Eternal Spirit. . . .

"After what has been said, perhaps none of you will deny that what has been insisted on [as to the care of the body] is right and proper—in short, a duty. But some of you may still feel disposed to ask,—Is this a religious duty? Is it part of Christianity that we should obey these sanitary commandments, under pain of the anger of God,—under pain of guilt?

"Now, let me answer,—

"1. That every duty is a religious duty: for to say *it is duty*, is to say *it is required by Him whose we are, and whom we are bound to obey and serve*, at all times, and in all things, with all that we possess, and all that we are.

"2. If anything be God's will, it is *for that reason* our law, *in whatever manner we may have discovered that it is His will*, whether it be written in a book, or signified by facts.

"Supposing it were demonstrated that any institution or custom tended to generate disease in the community; for example, that marriages within certain degrees generally produced an issue deficient in bodily health and vigour: on that supposition, such marriages would be forbidden by the Almighty Governor of the world, as much as if He commissioned an archangel with a trumpet to proclaim the prohibition to the human race; or as if He sent to every person a well-authenticated letter or book, in which the prohibition

was written. To doubt this, is to doubt that there is a moral purpose in God's providence, or that its penalties are prohibitions; which seems to me the very essence of atheism.

"3. A very great number, not to say a large proportion, of the ordinances of the Mosaic law, were designed to secure the bodily health and physical welfare of the Hebrew people,—besides other and higher objects to which they also were conducive in various ways; and obedience to these ordinances was to be rewarded by the attainment of those blessings; disobedience punished by physical and temporal penalties. Whatever other rewards and punishments might be *suggested* by the Law, none other but these are mentioned. This is unquestionable. (See Lev. xxvi. and Deut. xxviii.)

"Since, then, regulations for securing the physical wellbeing of the people formed parts of the Jewish system, we, who acknowledge the divine origin of that system, cannot reasonably doubt that the care of health and wise sanitary measures have a religious character, and involve a religious obligation. We could escape this inference only by holding that the institutions of Moses were in great part not religious, but merely secular.

"And how can we doubt that health and long life are precious blessings and worth our earnest pursuit, when Moses promised them, in the name of the Lord, as rewards to His chosen people? The Sabbath itself was instituted for the health and relief of the body, no less than for the edification of the soul; in which merciful ordinance, slaves, and even the beasts, were considered. (See Exod. xxiii. 12, and Deut. v. 13, 14.) So much is this the case, that, in the Pentateuch, hardly any duty connected with the Sabbath is specified but *resting*, or any purpose assigned but bodily refreshment. From which it would seem to follow, that the Sabbath is then only *sanctified*, that is, separated to its legitimate purposes, when the rest, refreshment, health of the body, are provided for and attended to, as well as the worship of God, in public and private."—*What Christianity teaches concerning the Body; a Sermon preached in the Parish Church, Crathie, 11th Oct.* 1857, *by Robert Lee, D.D., Regius Professor of Biblical Criticism and Biblical Antiquities in the University of Edinburgh, &c. (published by Her Majesty's command)*, pp. 7–8, 24–27; Edin. 1857.

No. II.—Opinions of Philosophers respecting the Natural Laws.

Text, p. 35.

It is mentioned in the text that many philosophers have treated of the laws of nature. The following are examples :—

"Laws in their most general signification," says Montesquieu, "are the necessary relations derived from the nature of things. In this sense, all beings have their laws ; the Deity has his laws ; the material world its laws ; the intelligences superior to Man have their laws ; the beasts their laws ; Man his laws.

"Those who assert that a blind fatality produced the various effects we behold in this world, are guilty of a very great absurdity ; for can anything be more absurd than to pretend that a blind fatality could be productive of intelligent beings ?

"There is, then, a primitive reason ; and laws are the relations which subsist between it and different beings, and the relations of these beings among themselves.

"God is related to the universe as creator and preserver ; the laws by which he has created all things are those by which he preserves them. He acts according to these rules because he knows them ; he knows them because he has made them ; and he made them because they are relative to his wisdom and power, &c.

"Man, as a physical being, is, like other bodies, governed by invariable laws."—*Spirit of Laws*, book i. chap. i.

Justice Blackstone observes, that "Law, in its most general and comprehensive sense, signifies a rule of action ; and is applied indiscriminately to all kinds of action, whether animate or inanimate, rational or irrational. Thus we say the laws of motion, of gravitation, of optics, or mechanics, as well as the laws of nature and of nations."—"Thus, when the Supreme Being formed the universe and created matter out of nothing, He impressed certain principles upon that matter, from which it can never depart, and without which it would cease to be. When He put that matter into motion, he established certain laws of motion, to which all moveable bodies must conform."—"If we farther advance from mere inactive matter to vegetable and animal life, we shall find them still governed by laws : more numerous, indeed, but equally fixed and invariable. The whole progress of plants from the seed to the root, and from

thence to the seed again—the method of animal nutrition, digestion, secretion, and all other branches of vital economy—are not left to chance, or the will of the creature itself, but are performed in a wondrous involuntary manner, and guided by unerring rules laid down by the great Creator. This, then, is the general signification of law—a rule of action dictated by some superior being; and, in those creatures that have neither power to think nor to will, such laws must be invariably obeyed, so long as the creature itself subsists; for its existence depends on that obedience."—*Commentaries on the Laws of England*, vol. i. sect. 2.

"The word *law*," says Mr Erskine, "is frequently made use of both by divines and philosophers, in a large acceptation, to express the settled method of God's providence, by which he preserves the order of the material world in such a manner, that nothing in it may deviate from that uniform course which he has appointed for it. And as brute matter is merely passive, without the least degree of choice upon its part, these laws are inviolably observed in the material creation, every part of which continues to act, immutably, according to the rules that were from the beginning prescribed to it by infinite wisdom. Thus philosophers have given the appellation of *law* to that motion which incessantly pervades and agitates the universe, and is ever changing the form and substance of things; dissolving some, and raising others, as from their ashes, to fill up the void; yet so that, amidst all the fluctuations by which particular things are affected, the universe is still preserved without diminution. Thus also they speak of the laws of fluids, of gravitation, &c., and the word is used in this sense in several passages of the Sacred Writings; in the book of Job, and in Proverbs viii. 29, where God is said to have given his law to the seas, that they should not pass his commandment."—*Institutes of the Law of Scotland*, book i. tit. i. sect. 1.

Cowper, in his Table Talk, after stating that vice disposes the mind to submit to the usurped command of tyranny, exclaims—

> "A dire effect, by one of Nature's laws,
> Unchangeably connected with its cause."

Discussions about the Laws of Nature, rather than inquiries into them, were common in France at the time of the Revolution; and having become associated in imagination with the crimes and horrors of that period, they continue to be regarded by some as in-

consistent with religion and morality. A coincidence between the views maintained in the preceding pages, and a passage in Volney, has been pointed out to me as an objection to the whole doctrine. Volney's words are the following :—

" It is a law of nature, that water flows from an upper to a lower situation ; that it seeks its level ; that it is heavier than air ; that all bodies tend towards the earth ; that flame rises towards the sky ; that it destroys the organisation of vegetables and animals ; that air is essential to the life of certain animals ; that, in certain cases, water suffocates and kills them ; that certain juices of plants, and certain minerals, attack their organs and destroy their life ; and the same of a variety of facts.

" Now, since these facts, and many similar ones, are constant, regular, and immutable, they become so many real commands, to which Man is bound to conform under the express penalty of punishment attached to their infraction, or wellbeing connected with their observance. So that if a man were to pretend to see clearly in the dark, or is regardless of the progress of the seasons, or the action of the elements ; if he pretends to exist under water without drowning, to handle fire without burning himself, to deprive himself of air without suffocating, or to drink poison without destroying himself ; he receives, for each infraction of the law of nature, a corporal punishment proportioned to his transgression. If, on the contrary, he observes these laws, and founds his practice on the precise and regular relation which they bear to him, he preserves his existence, and renders it as happy as it is capable of being rendered : and since all these laws, considered in relation to the human species, have in view only one common end, that of their preservation and their happiness, it has been agreed to assemble together the different ideas, and express them by a single word, and call them collectively by the name of the *Law of Nature.*"—Volney's *Law of Nature*, 3d edit., pp. 21–24.

I feel no embarrassment on account of this coincidence ; but remark—1. That various authors, quoted in the text and in this note, advocated the importance of the laws of nature long before the French Revolution was heard of ; 2. That the existence of the laws of nature is as obvious to the understanding, as the existence of the external world, and of the human body itself, to the senses ; 3. That these laws, being inherent in creation, must have proceeded from the Deity ; 4. That if the Deity is powerful, just, and benevolent,

they must harmonize with the constitution of Man; and, 5. That if the laws of nature have been instituted by the Deity, and been framed in wise, benevolent, and just relationship to the human constitution, they must at all times form the highest and most important subjects of human investigation, and remain altogether unaffected by the errors, follies, and crimes of those who have endeavoured to expound them: just as Religion continues holy, venerable, and uncontaminated, notwithstanding the hypocrisy, wickedness, and inconsistency of individuals professing themselves her intepreters and friends.

That the views of the natural laws themselves, advocated in this work, are diametrically opposite to the practical conduct of the French revolutionary ruffians, requires no demonstration. My fundamental principle is, that Man can enjoy happiness on earth only by preserving his habitual conduct under the direction of the moral sentiments and intellect, and that this is the *law of his nature.* No doctrine can be more opposed than this to fraud, robbery, blasphemy, and murder.

It may be urged, that all past speculations about the laws of nature have proved more imposing than useful; and that, while the laws themselves afford materials for elevated declamation, they form no secure guides even to the learned, and much less to the illiterate, in practical conduct. In answer, I would respectfully repeat what has frequently been urged in the text, that before we can discover the laws of nature applicable to Man, we must know the constitution of Man himself, and that of external nature; and must compare the two. But, until the discovery of Phrenology, the mental constitution of Man was a matter of vague conjecture and endless debate; and the connection between his mental powers and his organised system was involved in the deepest obscurity. The brain, the most important organ of the body, had no ascertained functions. Before the introduction of Phrenology, therefore, men were rather impressed with the unspeakable importance of the knowledge of the laws of nature, than extensively acquainted with those laws themselves; and even the knowledge of the external world actually possessed, could not, in many instances, be rendered available, on account of its relationship to the qualities of Man being unascertained, and unascertainable so long as these qualities themselves were unknown.

The adaptation of the constitution of Man and animals to the

circumstances in which they are placed has been noticed by former writers.

Lord Kames observes: "The wisdom of Providence is in no instance more conspicuous than in adjusting the constitution of Man to his external circumstances."—*Sketches*, b. i. sk. 7. And again: "The hand of God is nowhere more visible than in the nice adjustment of our internal frame to our situation in this world."—B. iii. sk. 2. chap. i. sect. i.

Mr Stewart says: "To examine the economy of nature in the phenomena of the lower animals, and to compare their instincts with the physical circumstances of their external situation, forms one of the finest speculations of Natural History; and yet it is a speculation to which the attention of the natural historian has seldom been directed. Not only Buffon, but Ray and Derham, have passed it over slightly; nor, indeed, do I know of any one who has made it the object of a particular consideration but Lord Kames, in a short Appendix to one of his Sketches."—*Elements of the Philosophy of the Human Mind*, vol. iii. p. 368.

Mr Stewart says also: "Numberless examples show that Nature has done no more for Man than was necessary for his preservation, leaving him to make many acquisitions for himself, which she has imparted immediately to the brutes.

"My own idea is, as I have said on a different occasion, that both *instinct* and *experience* are here concerned, and that the share which belongs to each in producing the result can be ascertained by an appeal to facts alone."—Vol. iii. p. 338.

The following is extracted from the *Quarterly Review*, vol. xxxi. p. 51:—"Each must coincide in the desire of the Stoic to harmonize his conduct with the physical and moral order of the universe. When to the knowledge of each the Christian adds a deeper insight into the government of the Almighty, and learns that to act in concert with the system of the universe is to promote his own eternal as well as his temporal happiness, his inducements are still stronger to employ the powers of self-government with which he has been gifted, in conforming his feelings and actions to the plan of the great Architect." The article in which this passage occurs is ascribed to Bishop Heber in Darling's *Cyclopædia Bibliographica*, p. 2487.

No. III.—Muscular Labour.

Text, p. 54.

So little should the necessity for bodily exertion be regarded as an evil, that in reality there is no human desire more powerful and universal than *the desire of action*, and none the denial of whose gratification is productive of greater uneasiness.

"To be happy," says Dr Thomas Brown, "it is necessary that we be occupied; and, without our thinking of the happiness which results from it, Nature has given us a constant desire of occupation. We must exert our limbs, or we must exert our thought; and when we exert neither, we feel that languor of which we did not think before, but which, when it is felt, convinces us how admirably our desire of action is adapted for the prevention of this very evil, of which we had not thought; as our appetites of hunger and thirst are given to us for the preservation of health, of which we think as little during the indulgence of our appetites, as we think, during our occupation, of the languor which would overwhelm us if wholly unoccupied. How wretched would be the boy if he were to be forced to lie, even on the softest couch, during a whole day, while he heard at intervals the gay voices of his playmates without, and could distinguish by these very sounds the particular pastimes in which they were engaged! How wretched, in these circumstances, is Man himself; and what fretfulness do we perceive, even on brows of more deliberate thought—on brows, too, perhaps, that, in other circumstances, are seldom overcast—if a few successive days of wet and boisterous weather have rendered all escape into the open air, and the exercises which this escape would afford, impossible! . . .

"Without the knowledge of the pleasure that is thus felt in mere exertion, it would not be easy for us to look with satisfaction on the scene of human toil around us—which assumes instantly a different aspect when we consider this happy principle of our mental constitution. Though we are apt to think of those who are labouring for others as if they were not labouring for themselves also—and though unquestionably, from our natural love of freedom, any task which is *imposed* cannot be as agreeable as an occupation spontaneously chosen—we yet must not think that the labour itself is necessarily an evil, from which it would be happiness for Man to be freed. Nature has not dealt so hardly with the *great multitude;* in com-

parison with whom the *smaller number*, for whose accommodation she seems to have formed a more sumptuous provision, are truly insignificant. . . . How different would the busy scene of the world appear, if we would conceive that no pleasure attended the occupations to which so great a majority of our race would then seem to be *condemned*, almost like slaves that are fettered to the very instruments of their daily task! How different from that scene, in which, though we perceive many labouring and a few at rest, we perceive in the labourer a pleasure of occupation, which those who rest would often be happy to purchase from him, and which they *do* sometimes endeavour to purchase, by the same means by which he has acquired it; by exercises as violent and unremitted as his, and which have the distinction only of being of less advantage to the world than those toils by which *he* at once promotes his own happiness and contributes to the accommodation of others! It is pleasing thus to perceive a source of enjoyment in the very circumstance which might seem most hostile to happiness; to perceive in the labour itself, of which the necessity is imposed on Man, a consolation for the loss of that very freedom which it constrains."—*Lectures on the Philosophy of the Human Mind*, vol. iii. pp. 409–412; Lect. 66.

No. IV.—Organic Laws—Childbed.

Text, p. 122.

On the subject of the sufferings of women in childbed, the following authorities may be quoted:—

"One thing," says Sir Archibald Alison, "is very remarkable, and occurs in most cases of concealment and child-murder, viz. the strength and capability for exertion evinced by women in the inferior ranks shortly after childbirth—appearances so totally different from those exhibited in the higher orders, that, to persons acquainted only with cases among the latter, they would appear incredible. In the case just mentioned (that of Catherine Butler or Anderson, at Aberdeen, in spring 1829), the mother, two or three days after her delivery, walked from Inverury to Huntly, a distance of twenty-eight miles, in a single day, with her child on her back. Similar occurrences daily are proved in cases of this description. It is not unusual to find women engaged in reaping retire to a little distance, effect their delivery by themselves, return to their fellow-labourers, and go on with their work during the remainder of the day, without

any other change of appearance but looking a little paler and thinner. Such a fact occurred in the case of Jean Smith, Ayr, spring 1824. Again, in the case of Ann Macdougall, Aberdeen, spring 1823, it appeared that the panel, who was sleeping in bed with two other servants, rose, was delivered, and returned to bed, without any of them being conscious of what had occurred. Instances have even occurred in which women have walked six or eight miles on the very day of their delivery, without any sensible inconvenience. Many respectable medical practitioners, judging from what they have observed among the higher ranks, would pronounce such facts impossible; but they occur so frequently among the labouring classes as to form a point worthy of knowledge in criminal jurisprudence; and to render perfectly credible what is said of the female American Indians, that they fall behind for a little on their journeys through the forests, deliver themselves, and shortly make up to their husbands, and continue their journey with their offspring on their back."—*Principles of the Criminal Law of Scotland*, pp. 161, 162.

Mr Lawrence observes, that "the very easy labours of Negresses, native Americans, and other women in the savage state, have been often noticed by travellers. This point is not explicable by any prerogative of physical formation; for the pelvis is rather smaller in these dark-coloured races than in the European and other white people. Simple diet, constant and laborious exertion, give to these children of nature a hardiness of constitution, and exempt them from most of the ills which afflict the indolent and luxurious females of civilised societies. In the latter, however, the hard-working women of the lower classes in the country often suffer as little from childbirth as those of any other race. Analogous differences, from the like causes, may be seen in the animal kingdom. Cows kept in towns, and other animals deprived of their healthful exercise, and accustomed to unnatural food and habits, often have difficult labours, and suffer much in parturition."—*Lectures on Physiology, Zoology, and the Natural History of Man*, vol. ii. p. 190; Lond. 1822.

Among the Araucanian Indians of South America, "a mother, immediately on her delivery, takes her child, and going down to the nearest stream of water, washes herself and it, and returns to the usual labours of her station."—Stevenson's *Twenty Years' Residence in South America*, vol. i. p. 9.

No. V.—Hereditary Descent of National Physiognomy.

Text, p. 162.

National *features* descend unchanged through many centuries, as is shown by Dr W. C. Edwards, in his work on *The Physiological Characters of Races of Mankind considered in their relations to History* (Paris, 1829). An excellent abstract of this work, by the late Dr William Gregory, may be seen in the *Phrenological Journal*, vol. ix. p. 97. Dr Edwards has adduced the Jews as an example. "In the first place, Jews in all countries resemble each other, and differ from the people among whom they live. Secondly, at distant periods they had the same external characters. In the Last Supper of Leonardo da Vinci, this painter, who was an excellent naturalist and close observer, has painted faces which might be portraits of living Jews. This was 300 years ago; but we have evidence that 3000 years ago the Jews had the same characters.

"In the copy of the paintings adorning the tomb of an Egyptian king, exhibited in London about ten years ago, there are representations of four different races in procession:—1*st*, The natives, very numerous, of a dark brown tint, but without the woolly hair of the Negro; 2*d*, Negroes, with the black skin, thick lips, and woolly hair of that race; 3*d*, Persians; and, 4*th*, Jews, distinguished, says Belzoni, by their complexion and physiognomy. Dr Edwards says, 'I had seen, on the previous day, Jews in the streets of London; I thought that I now saw their portraits.'"

No. VI.—Hereditary Complexion.

Text, p. 170.

Mr W. B. Stevenson, in his *Narrative of Twenty Years' Residence in South America*, vol. i. p. 286, says that he has "always remarked, that in cases where parents are of different castes, the child receives more of the colour of the father than of the mother." He made extensive observations during a long residence in Lima; a place, he remarks, than which there cannot be any more favourable for an examination of the influence of the configuration of the human face, or of its colour, on the intellectual faculties. He gives the following Table, showing the mixture of the different castes, under their common or distinguishing names. But "this table," says he,

"which I have endeavoured to make as correct as possible from personal observation, must be considered as general, and not including particular cases."

Father.	Mother.	Children.	Colour.
European	European	Creole	White.
Creole	Creole	Creole	White.
White	Indian	Mestiso	6-8ths White, 2-8ths Indian —Fair.
Indian	White	Mestiso	4-8ths White, 4-8ths Indian.
White	Mestiso	Creole	White—often very fair.
Mestiso	White	Creole	White—but rather sallow.
Mestiso	Mestiso	Creole	Sallow—often light hair.
White	Negro	Mulatto	7-8ths White, 1-8th Negro—often fair.
Negro	White	Zambo	4-8ths White, 4-8ths Negro —dark copper.
White	Mulatto	Quarteron	6-8ths White, 2-8ths Negro —Fair.
Mulatto	White	Mulatto	5-8ths White, 3-8ths Negro —Tawny.
White	Quarteron	Quinteron	7-8ths White, 1-8th Negro—very fair.
Quarteron	White	Quarteron	6-8ths White, 2-8ths Negro —Tawny.
White	Quinteron	Creole	White—light eyes, fair hair.
Negro	Indian	Chino	4-8ths Negro, 4-8ths Indian.
Indian	Negro	Chino	2-8ths Negro, 6-8ths Indian.
Negro	Mulatto	Zambo	5-8ths Negro, 3-8ths White.
Mulatto	Negro	Zambo	4-8ths Negro, 4-8ths White.
Negro	Zambo	Zambo	15-16ths Negro, 1-16th White—Dark.
Zambo	Negro	Zambo	7-8ths Negro, 1-8th White.
Negro	Chino	Zambo-Chino	15-16ths Negro, 1-16th Indian.
Chino	Negro	Zambo-Chino	7-8ths Negro, 1-8th Indian.
Negro	Negro	Negro	

No. VII.—Hereditary Transmission of Qualities.

Text, p. 173.

Fortified by the observations made at the commencement of the second section of Chapter V., I venture to cite some additional

authorities, and to record some further facts, observed by myself or communicated by persons on whose accuracy reliance may be placed, in support of the doctrine of the transmission of qualities by hereditary descent.

"The advice which I am now about to give," says Plutarch, "is indeed no other than what hath been given by those who have undertaken this argument before me. You will ask me, what is that? 'Tis this, that no man keep company with his wife for issue sake but when he is sober—as not having before either drunk any wine, or, at least, not to such a quantity as to distemper him; for they usually prove winebibbers and drunkards whose parents begot them when they were drunk: wherefore Diogenes said to a stripling somewhat crack-brained and half-witted, Surely, young man, thy father begot thee when he was drunk."—*Plutarch's Morals*, English transl., vol. i. p. 2; London, 1718.

It is remarked by Burton in his *Anatomy of Melancholy*, that "if a drunken man gets a child, it will never, likely, have a good brain."

The passion for intoxicating liquors is sometimes hereditary. Dr Gall mentions a Russian family, in which the father and grandfather fell victims in early life to their propensity to drunkenness. The son, although he foresaw the consequences of this pernicious habit, continued to abandon himself to it, in spite of every resolution to the contrary; and the grandson, who was only five years of age when Dr Gall wrote, displayed even then a most decided inclination for spirituous liquors. (*Sur les Fonctions du Cerveau*, i. 410.) As these facts can hardly be explained by the influence of example, it follows that a peculiar state of the organism, giving rise to the mental peculiarity, was in this case transmitted from one generation to another. In point of fact, Dr Caldwell has shown much reason for considering the irresistible desire for intoxicating liquors as a symptom of cerebral disease, having its special seat probably in the organ of alimentiveness. As long as this disease exists, the desire is strongly felt, and every appeal to the understanding of the repentant and unhappy patient is in vain. "Am I asked," says Dr Caldwell, "how drunkenness then is to be cured, and the tormenting propensity which leads to it eradicated? I answer, by the same means which are found successful in the treatment of other forms of insanity, where the cerebral excitement is preternaturally high. These are, seclusion and tranquillity, bleeding, puking, purging,

cold water, and low diet. In this prescription I am serious ; and if it be opportunely adopted and resolutely persevered in, I freely peril my reputation on its success. . . . If interrogated on the subject, the resident physician of the Kentucky Lunatic Asylum will state that he finds, in the institution he superintends, no difficulty in curing *mania a potu* by the treatment here directed."—*Transylvania Journal of Medicine*, for July 1832, pp. 332–3 ; see also *Phren. Jour.*, vol. viii. p. 624. Dr Caldwell admits, however, that it is only recent and acute cases which can be speedily cured ; those of long standing are much less tractable, and occasionally the disease may be found incurable. He thinks, very justly, that nothing would tend more to diminish the prevalence of habitual drunkenness, than to have it deemed and proclaimed a form of madness, and dealt with accordingly. Hospitals erected for the reception of drunkards, and authority given to confine them there, would be among the most important institutions that could be established, and would effect an immense saving of life, health, property and reputation. In regard to the hereditary transmission of this miserable tendency, Dr Caldwell observes :—" Every constitutional quality, whether good or bad, may descend, by inheritance, from parent to child. And a long continued habit of drunkenness becomes as essentially constitutional, as a predisposition to gout or pulmonary consumption. This increases, in a manifold degree, the responsibility of parents in relation to temperance. By habits of intemperance, they not only degrade and ruin *themselves*, but transmit the elements of like degradation and ruin to their posterity. This is no visionary conjecture, the fruit of a favourite and long-cherished theory. It is a settled belief resulting from observation —an inference derived from innumerable facts. In hundreds and thousands of instances, parents, having had children born to them while their habits were temperate, have become afterwards intemperate, and had other children subsequently born. In such cases, it is a matter of notoriety, that the younger children have become addicted to the practice of intoxication much more frequently than the elder—in the proportion of five to one. Let me not be told that this is owing to the younger children being neglected, and having corrupt and seducing examples constantly before them. The same neglects and profligate examples have been extended to all ; yet all have not been equally injured by them. The children of the earlier births have escaped, while those of the subsequent

ones have suffered. The reason is plain. The latter children had a deeper animal taint than the former."—*Transylvania Journal*, pp. 341–2.

The following case is recorded in the *Phrenological Journal*:—

"I now proceed to give some facts strongly illustrative of the doctrine, that the faculties which predominate in power and activity in the parents, when the organic existence of the child commences, determine its future mental dispositions. This is a doctrine to which, from its great practical importance, I would beg leave to call your serious attention. It was remarked by the celebrated Esquirol, 'that the children whose existence dated from the horrors of the first French Revolution, turned out to be weak, nervous, and irritable in mind, extremely susceptible of impressions, and liable to be thrown by the least extraordinary excitement into absolute insanity.' Sometimes, too, family calamities produce serious effects upon the offspring. A very intelligent and respectable mother, upon hearing this principle expounded, remarked, that there was a very wide difference in the intellectual and moral development between one of her children and the others; and accounted for this difference by the fact, that, during pregnancy, she received intelligence that the crew of the ship, on board of which was her son, had mutinied—that when the ship arrived in the West Indies, some of the mutineers, and also her son, had been put in irons—and that they were all to be sent home for trial. This intelligence acted so strongly upon her, that she suffered a temporary alienation of judgment. The report turned out to be erroneous, but this did not avert the consequences of the agitated state of the mother's feelings upon the daughter she afterwards gave birth to. That daughter is now a woman, but she is, and will continue to be, a being of impulses, incapable of reflection, and in other respects greatly inferior to her sisters."—Vol. viii. p. 471.

Shakspeare seems to recognise the law of the transmission of temporary mental qualities:—

> "Come on, ye cowards; ye were got in fear,
> Though ye were born in Rome."
>
> *Coriolanus*, Act i., Sc. 6.

A gentleman, who has paid much attention to the rearing of horses, informed me that the male racehorse, when excited, but not exhausted, by running, has been found by experience to be in

the most favourable condition for transmitting swiftness and vivacity to his offspring. Another gentleman stated, that he was himself present when the pale gray colour of a male horse was objected to; that the groom thereupon presented before the eyes of the male another female from the stable, of a very particular but pleasing variety of colours, asserting that the latter would determine the complexion of the offspring; and that in point of fact it did so. The experiment was tried in the case of a second female, and the result was so completely the same, that the two young horses, in point of colour, could scarcely be distinguished, although their spots were extremely uncommon. The account of Laban and the peeled rods laid before the cattle to produce spotted calves, is an example of the same kind.

The subjoined observations are extracted from *Outlines of the Veterinary Art*, by Dalabere Blaine, 3d edition, p. 327; London, 1826:—"That the organisation of the mare, her qualities, and even her diseases, are imprinted on her offspring, is hardly to be wondered at; but how are we to account for the effects which even her imagination has over the young within?—and that such is the case, we have innumerable proofs. As early as the patriarchal time, the fact was known and acted on. These anomalies in the gestation of the horse are less frequent than in the more closely domesticated animals, as dogs; yet there are not wanting instances of these mental impressions sinking deeply into the mind of the mare also, and being called into recollection and action in every future pregnancy. Lord Morton bred from a male quagga and a chestnut mare. The mare was afterwards bred from by a black Arabian horse; but still the progeny exhibited, in colour and mane, a striking resemblance to the quagga. D. Giles, Esq., had a sow of the black and white kind, which was bred from by a boar of the wild breed, of a deep chestnut colour: the pigs produced by this intercourse were duly mixed, the colour of the boar being in some very predominant. The sow was afterwards bred from by two of Mr Western's boars, and in both instances chestnut marks were prevalent in the latter, which, in other instances, had never presented any appearance of the kind. (*Phil. Trans.* 1821.) See many other instances detailed in the *Canine Pathology*, 3d edition, p. 94."

The same writer gives some interesting details to show the necessity for attending to the qualities of both parents in the breeding of horses. "The general characteristic form of the animal,"

says he, "is arbitrarily settled by nature, but the individualities of character in the separate organs are divided between the parents in nearly equal proportions.* This is exemplified in the breed which arises from the intermixture of the blood with the cart breed, where the extreme difference in form and character is nicely blended, yet the peculiarities of each remain distinguishable.† This proves the great error committed by the generality of farmers and small breeders, who, careless about the dam, breed from any mare they happen to possess or can procure; though it may even be unfitted for work by disease or age; and expect, provided they gain a leap from a tolerable stallion, to procure a valuable progeny. But it is in vain to hope for good form and useful qualities under such circumstances; for it will be generally found that the properties of each parent are equally proportioned in the progeny—and this fact is so well known to judicious breeders, that they select both sire and dam with equal care. This dependence on the law by which the distribution of form and qualities is equally dependent on both parents, leads to the correction of defects in particular breeds, by selecting one parent eminent for a form or quality for which the other is as notoriously defective. Should a mare, otherwise valuable, present a low heavy forehand, beyond even that which is her sexual characteristic, by choosing her a male more than usually thin and elevated in his crest, the defect will be remedied; whereas, if this be not attended to, whatever other properties each may possess, a serious defect is propagated and increased, and the produce can be of little value. It is also by a judicious attention to these circumstances, that particular breeds are preserved with their original integrity, or new varieties introduced."—"It is by the

* "It is by no means intended here to deny that the external characters of some breeds are principally derived from the male, and of others from the female; but these anomalies, for which we cannot account, do not tend to alter the general similitude observed towards both parents. In the multiparous animals, it is often observed that the influence of one parent preponderates in a part of the progeny, and of the other in another part of it. Thus it happens that, when a pointer and setter breed together, it is not unusual to find part of the whelps almost perfect pointers, and the remainder as nearly true setters."

† "The hybrid mule divides in equal proportions the equine and asinine characters; at the same time it must be allowed that the hinny, or produce of the stallion and ass, is more allied to the horse than the mule, or progeny from the male ass and mare."

choice of such parents as have the specified and definite form in the greatest perfection, that we are enabled in the progeny to perpetuate the same, and by future selections to improve it. The merits and defects of each parent should be previously subjected to careful examination; and it is only by a judicious balancing of the one against the other that perfect success is to be expected. It is thus that our racers have outstripped all competitors; it is thus that a Russell, a Coke, a Bakewell, and an Ellman, have raised our ruminants to their present state; and it is by the same art that a Meynell, a Rivers, and a Topham, have produced unrivalled dogs. Our power over the animal form and qualities, by the selection of parents, and subjecting their progeny to particular nurture, careful domestication, restraint and discipline, is truly surprising. The shepherd's dog is in some breeds born with a short tail; thus the very base of the machine, that which of all the parts is the least subjected to alteration by any physical or moral agency, the bones, even become subjected to our caprice. The Hereford ox can be bred to a white face, or a half-white face, and the length of the horns of others can be ensured to an inch. The Spitalfields weavers assert, that they can ensure almost to a certainty in the Marlborough breed of spaniels, which flourishes among them, any given quantity of colour, length of coat and texture of it, and regulate its disposition to curl or remain straight. The colour of the game-cock is arbitrarily imposed by the handler and feeder; and the experienced pigeon-fancier can breed to a feather. It should not be lost sight of, that qualities, as well mental as personal, are also to be cultivated and handed down in the breed. Many qualities may be considered as dependent on the organisation; such as hardihood, particular excellence in one pace, &c. These it may be expected, *à priori*, might be perpetuated; and we are not surprised at a son of Eclipse or Matchem having speed in his gallop, or the produce of a Norfolk trotter excelling in that pace; but it is not equally taken into the account that temper, courage, docility, and patience under restraint, are equally handed down in hereditary descent as the peculiarities of form."—Pp. 321-323.

Mr Blaine expresses himself not hostile to in-and-in breeding; in defence of which he adduces several arguments and authorities, as well as his own experience, and says he "could quote innumerable other authorities" to the same effect. "But candour," he adds, "obliges me also to own, that there exists a large number of able

antagonists to it also. My limits only allow me to add, that many practical breeders, who are averse to breeding in succession from near relationship by blood, are favourable to it in a remote degree, which is particularly the case with some rearers of game-fowls, who seek the intercourse of a third remove, which they call a '*nick*.' From these conflicting testimonies, the matter will, with many, be considered as problematical. With me, the only arguments against it which it appears cannot be satisfactorily answered are, that as hereditary diseases in some breeds are considerable, by this mode of breeding they would be perpetuated and probably increased; and likewise, that when breeding by relationship is a settled practice, accidental defects are too apt to be passed over unobserved."—P. 325.

He notices also a very important circumstance in relation to hereditary transmission—what is popularly denominated *breeding back*,—that is to say, the appearance in the second or third generation of qualities of the progenitors, not observable in the first generation.

"It is observed," he says, "that the progeny of the horse, of man, and of most domestic animals, shall bear a more striking resemblance to the granddam or grandfather than to their own immediate parents. It is evident that this is more likely where a common character has been preserved during successive generations, or, in turf language, where the blood has been preserved pure. A practical hint naturally presents itself on the extreme importance, therefore, of admitting no accidental admixture of blood, where it is peculiarly requisite that it should flow in true lineal descent; seeing that its debasing consequences are carried through whole generations, and unexpectedly appear in a third or fourth."—P. 326.

Dr Elliotson, in a note to the fourth edition of his translation of Blumenbach's *Physiology*, p. 569, observes, that "experience teaches us, that changes brought about in an animal after birth are not in general transmitted to the offspring. The causes of change in a species must therefore operate, not by altering the parents, but by disposing them to produce an offspring more or less different from themselves. Such is John Hunter's view of the question, and it is certainly confirmed by every fact. I fear that John Hunter has not generally the credit of this observation, but the following passage shows it to be clearly his:—'As animals are known to produce young which are different from themselves in colour, form, and disposition, arising from what may be called the unnatural mode of

life, it shows this curious power of accommodation in the animal economy, that although education can produce no change in the colour, form, or disposition of the animal, yet it is capable of producing a principle which becomes so natural to the animal, that it shall beget young different in colour and form, and so altered in disposition as to be more easily trained up to the offices in which they have been usually employed; and having the dispositions suitable to such changes of form.'—Hunter *On the Wolf, Jackal, and Dog.*" Dr Elliotson adds a variety of illustrations, to which the reader is referred.

It is stated by Dr W. C. Edwards, in the work named in No. V. of this Appendix, that when animals of different species are crossed, they produce an animal of an intermediate type, or a mule; but that when different varieties of the same species are mixed, the result is often quite different. M. Coladon of Geneva, he says, made a very striking experiment, which bears strongly on this point. He procured a great number of white mice, as well as of common brown mice, studied their habits, and found means to cause them to breed. In his experiments he always put together mice of different colours, expecting a mixed race; but this did not occur in one instance. All the young mice were either white or brown, but each type was produced always in a state of purity. Even in the case of varieties of the same species, adds Dr Edwards, we have an intermediate type or mule; but this is when the varieties differ most from each other; when, as in the case of the mice, they approach very nearly, mules are not produced. In both cases we see one common principle; namely, that the mother often produces a being of a type different from her own—less so, however, in the latter case. This principle is seen even in the same variety; for here also the mother, in producing a male, gives birth to a being whose type differs, and in some cases differs very much, from her own. Now, says Dr E., the same is observed in Man. The varieties which differ most strongly, such as the Negro and White, when crossed, produce Mulattoes; and when varieties more nearly resembling each other are crossed, the descendants sometimes resemble one parent, sometimes the other, sometimes both. This Dr Edwards looks upon as the cause of the great variety observable in modern nations; among which, however, he thinks we can always observe specimens of the pure types which have entered into their composition. Thus, even if two races having considerable resemblance to each other, and in equal num-

bers, were to mix without limitation, the original types would still, in his opinion, frequently occur in their descendants. Dr Edwards very ingeniously applies to the elucidation of history these and other principles connected with the physiological characteristics of races of mankind. For details, I refer to the *Phrenological Journal*, vol. ix. pp. 97–108.

In the *Quarterly Journal of Agriculture*, No. I., there are several valuable articles illustrative of hereditary transmission in the inferior animals. I select the following examples :—

"Every one knows that the hen of any bird will lay eggs although no male be permitted to come near her; and that those eggs are only wanting in the vital principle which the impregnation of the male conveys to them. Here, then, we see the female able to make an egg, with yolk and white, shell and every part, just as it ought to be, so that we might, at the first glance, suppose that here, at all events, the female has the greatest influence. But see the change which the male produces. Put a Bantam cock to a large-sized hen, and she will instantly lay a small egg; the chick will be short in the leg, have feathers to the foot, and put on the appearance of the cock: so that it is a frequent complaint where Bantams are kept, that they make the hens lay small eggs, and spoil the breed. Reverse the case; put a large dunghill cock to Bantam hens, and instantly they will lay larger eggs, and the chicks will be good-sized birds, and the Bantam will have nearly disappeared. Here, then, are a number of facts known to every one, or at least open to be known by every one, clearly proving the influence of the male in some animals; and as I hold it to be an axiom that nature never acts by contraries, never outrages the law clearly fixed in one species by adopting the opposite course in another—therefore, as in the case of an equilateral triangle, on the length of one side being given we can with certainty demonstrate that of the remaining; so, having found these laws to exist in one race of animals, we are entitled to assume that every species is subjected to the self-same rules—the whole bearing, in fact, the same relation to each other as the radii of a circle."

Very young hens lay small eggs; but a breeder of fowls will never set these to be hatched, because the animals produced would be feeble and imperfectly developed. He selects the largest and freshest eggs, and endeavours to rear the healthiest stock possible.

"*A Method of Obtaining a Greater Number of one Sex, at the option of the Proprietor, in the Breeding of Live Stock.*"—Extracted from the Quarterly Journal of Agriculture, No I., p. 63.

"In the *Annales de l' Agriculture Française*, vols. xxxvii. and xxxviii., some very interesting experiments are recorded, which have lately been made in France, on the breeding of live stock. M. Charles Girou de Buzareingues proposed, at a meeting of the Agricultural Society of Séverac, on the 3d of July 1826, to divide a flock of sheep into two equal parts, so that a greater number of males or females, at the choice of the proprietor, should be produced from each of them. Two of the members of the Society offered their flocks to become the subjects of his experiments, and the results have now been communicated, which are in accordance with the author's expectations.

"The first experiment was conducted in the following manner:—He recommended very young rams to be put to the flock of ewes from which the proprietor wished the greater number of females in their offspring; and also, that, during the season when the rams were with the ewes, they should have more abundant pasture than the other; while, to the flock from which the proprietor wished to obtain male lambs chiefly, he recommended him to put strong and vigorous rams four or five years old. The following tabular view contains the result of this experiment:—

FLOCK FOR FEMALE LAMBS.			FLOCK FOR MALE LAMBS.		
Age of the Mothers.	Sex of the Lambs.		Age of the Mothers.	Sex of the Lambs.	
	Males.	Females.		Males.	Females.
Two years,	14	26	Two years,	7	3
Three years,	16	29	Three years,	15	14
Four years,	5	21	Four years,	33	14
Total,	35	76	Total,	55	31
Five years and older, . .	18	8	Five years and older, . .	25	24
Total,	53	84	Total,	80	55
N.B.—There were three twin-births in this flock. Two rams served it, one fifteen months, the other nearly two years old.			*N.B.*—There were no twin-births in this flock. Two strong rams, one four, the other five years old, served it.		

"The general law, as far as we are able to detect it, seems to be, that, when animals are in good condition, plentifully supplied with food, and kept from breeding as fast as they might do, they are most likely to produce females. Or, in other words, when a race of animals is in circumstances favourable for its increase, nature produces the greatest number of that sex which, in animals that do not pair, is most efficient for increasing the numbers of the race: But if they are in a bad climate or on stinted pasture, or if they have already given birth to a numerous offspring, then nature, setting limits to the increase of the race, produces more males than females.

"Yet, perhaps, it may be premature to attempt to deduce any law from experiments which have not yet been sufficiently extended. M. Girou is disposed to ascribe much of the effect to the age of the ram, independent of the condition of the ewe."

No. VIII.—Laws relative to Education and Marriage in Germany.

Text, p. 179.

"It cannot be altogether foreign to natural history," says Mr Loudon, "to notice the influence of climate, food, and political and religious regulations, on the human species; and we are unwilling to leave Germany without saying something on so interesting a people as the Germans. It will not be denied that Man is subject to the same laws as other animals, and that his natural or inborn character must depend principally on the climate and products of the soil where he is placed. His factitious or civilised character will as certainly depend on his education—taking that word in its most extensive sense, as including parental care and example, scholastic tuition, religion, and government. In warm fertile countries, where nature produces everything spontaneously, Man becomes inactive, and has naturally few labours and few enjoyments. In extremely cold and inhospitable climates, the enjoyments of Man are also few, because the labour necessary to overcome natural objects is too great for his powers. It would seem, therefore, that intermediate climates are more favourable for human happiness than either extreme; but whether such are at all times temperate, as those of many parts of Italy and Spain, or such as are alternately temperate and severe, as those of the south of Germany and the north of France, are the best, may perhaps be doubted. It appears that a climate where

the winters are severe has a considerable influence on the human character, by the necessity which it induces of forethought, in the laying up a provision of food for winter, and the greater attention and labour that are requisite in the article of clothing for that season. It is certain, on the other hand, that, in climates at all times temperate, the health, other circumstances being alike, must be better than in severe climates, where it is impaired by the artificial atmosphere of apartments during the winter season; and constant good health must necessarily have a considerable influence on the character. Supposing, therefore, all the artificial circumstances to be the same in two climates, such as that of the south of Germany, and that of Italy or the central parts of France, it seems reasonable to conclude that Man would attain to a higher degree of perfection in the latter climates than in the former. So much for our theory of the influence of soil and climate on Man; and, for farther details, we refer the reader to Dr Falconer's work on the subject.

"Of all the artificial or accidental circumstances which influence the character, personal education must be allowed to be the greatest; and next, religion and government. Manner of life, occupations and pursuits, and even amusements, have an important influence. To do more than premise these matters, would be unsuitable to this Magazine; but what has been said became necessary as an introduction to what is to follow.

"Applying the above theory to the three States of Germany which we have passed through, Würtemberg, Bavaria, and Baden, the climate and soil of these States seem favourable in the second degree; education, to a certain extent, is there universal; religion is, on the whole, more simple than in some other countries; and the laws and government seem at least equal, in constitutional merits and impartial administration, to those of any people in Europe. The manner of life, or occupation, is chiefly agricultural; which, though not favourable to luxury or refinement, seems, without doubt, for the great mass of the people, the happiest mode of existence. Local and personal attachments are universally felt to be essential sources of happiness; and in no way can this feeling be gratified so easily and effectually as by the possession of land. In the three countries named, the great majority of the population are occupiers, in perpetuity, of a portion of the soil, either as absolute proprietors or as perpetual renters. This state of things is far from being favourable to what is called making money; but it is highly favourable to

health and contentment. It is a great deal for a poor man to have something which he can call his own ; something on which he can bestow labour, and from which he can, in consequence, extract enjoyment. The absolute necessities of life are few, and derived directly from the soil ; the labouring man, therefore, who has a house and a few roods of land, is certain of a home and food ; he increases the interest of his home by a wife ; and parental care and solicitude, with connubial and filial attachment, fill up the measure of his happiness. These are the essential purposes and enjoyments of life, which nature intended for all men ; which the poor man can enjoy as well as the rich ; and for which no other enjoyment, either of the rich or the poor, the wise or the learned, can entirely compensate. In no part of Europe have we seen, or thought we have seen, these enjoyments so generally diffused as in the countries we have recently passed through, and more especially Würtemberg. We entered on these countries, expecting to find the people not much better off than in France ; but we could not resist the conviction produced by constant observation, and the result of various inquiry, that comfort and happiness exist to a much greater degree among the labouring classes of society in the south of Germany than they do in Britain. The people, at first sight, have a milder and more civilised aspect. The dress of the country labourers, male and female, does not consist of such fine materials as in England ; but one part of the dress is of a quality consistent with the others, and the whole is in a superior style, compared with the dress of the other classes of society. There is no such thing, in this part of Germany, as a man or woman in rags, or with a coat or gown of the best quality and the hat or stockings in tatters, as is frequently the case, not only among labourers, but even among mechanics, in England. In short, the dress in Germany is in much better keeping. Both men and women of the labouring class here are more intelligent in their aspect, much more civil and polite on a first acquaintance, and much better furnished with conversation than the British labourers. What struck us particularly were, the great rarity of exceptions to this general description, the general uniformity of manner and character throughout the whole country, and the total absence of public beggars. On inquiry, we found that there were few or no poor supported publicly, though every parish is obliged to support its poor when unable to work ; and also, that there were few people in prison, either for debt or for crime of any kind.

"This state of things more particularly applies to Würtemberg; and the causes, we think, may be very easily traced. The first and principal cause is a law respecting schools, which has existed, more or less, in the states of the south of Germany for above a century, but which has been greatly improved within the last thirty years. By this law, *parents are compelled to send their children to school* from the age of six to fourteen years, where they must be taught reading, writing, and arithmetic, but where they may acquire as much additional instruction in other branches as their parents choose to pay for. To many of the schools of Bavaria large gardens are attached, in which the boys are taught the principal operations of agriculture and gardening in their hours of play; and, in all the schools of the three states, the girls, in addition to the same instruction as the boys, are taught knitting, sewing, embroidery, &c. It is the duty of the police and priest (which may be considered equivalent to our parish vestries) of each commune or parish, to see that the law is duly executed, the children sent regularly, and instructed daily. If the parents are partially or wholly unable to pay for their children, the commune makes up the deficiency. Religion is taught by the priest of the village or hamlet; and where, as is frequently the case in Würtemberg, there are two or three religions in one parish, each child is taught by the priest of its parents; all of which priests are, from their office, members of the committee or vestry of the commune. The priest or priests of the parish have the regular inspection of the schoolmaster, and are required by the Government to see that he does his duty; while each priest, at the same time, sees that the children of his flock attend regularly. After the child has been the appointed number of years at school, it receives from the schoolmaster, and the priest of the religion to which it belongs, a certificate, without which it cannot procure employment. To employ any person under twenty-one, without such a certificate, is illegal, and punished by a fixed fine, as is almost every other offence in this part of Germany; and the fines are never remitted, which makes punishment always certain. The schoolmaster is paid much in the same way as in Scotland: by a house, a garden, and sometimes a field, and by a small salary from the parish; and by fixed rates for the children.

"A second law, which is coeval with the school-law, *renders it illegal for any young man to marry before he is twenty-five, or any young woman before she is eighteen;* and a young man, at whatever

age he wishes to marry, must show to the police and the priest of the commune where he resides, that *he is able, and has the prospect, to provide for a wife and family.**

"There are minor causes, but these two laws, and the general possession of land both by labourers and tradesmen, are the chief. Amongst the minor causes are the general simplicity of their forms of religion, and universal toleration; even the Catholic faith in Würtemberg is unattended with the ceremony and spectacle with which it is exhibited in various parts of Germany and France. The equal footing on which the different religions are placed, is also favourable to liberality of sentiment and good neighbourhood. That particular mildness of feature and character, so different from what is met with in the labouring classes in England, is no doubt partly owing to the greater proportion of vegetables and fruits which enter into the general diet of the population; the almost total abstinence from strong liquors or spirits, the general drink being wine; and, perhaps, to the almost unremitted smoking of tobacco from morning to night."—*Magazine of Natural History.*

See also Mr Joseph Kay's work on *The Social Condition and Education of the People in England and Europe; showing the results of the Primary Schools and the Division of Landed Property in Foreign Countries;* Lond. 1850.

No. IX.—Death.

Text, p. 213.

The fact of a decrease in the mortality of England is strikingly supported by the following extract from the *Scotsman* of 16th April 1828. The article is from the pen of Mr Charles Maclaren, who then edited the paper; a gentleman whose extensive information, and scrupulous regard to accuracy and truth, stamp the highest

* Among the ancient Germans, according to Tacitus, early marriage was unusual, and the children were consequently robust: "Sera juvenum Venus; eoque inexhausta pubertas: nec virgines festinantur; eadem juventa, similis proceritas: pares validæque miscentur; ac robora parentum liberi referunt." (*Germania*, cap. 20, § 20.) And Cæsar says of the Gauls: "Qui diutissime impuberes permanserunt, maximam inter suos ferunt laudem: hoc ali staturam, ali hoc vires nervosque confirmari, putant. Intra annum vero vicesimum fœminæ notitiam habuisse, in turpissimis habent rebus." (*De Bello Gallico*, lib. 6, c. 21.)—Ed.

value on his statements of fact, and whose profound and comprehensive intellect warrants a well-grounded reliance on his philosophical conclusions.

"DIMINISHED MORTALITY IN ENGLAND.—The diminution of the annual mortality in England amidst an alleged increase of crime, misery, and pauperism, is an extraordinary and startling fact, which merits a more careful investigation than it has received. We have not time to go deeply into the subject; but we shall offer a remark or two on the question, how the apparent annual mortality is affected by the introduction of the cowpox, and the stationary or progressive state of the population. In 1780, according to Mr Rickman, the annual deaths were 1 in 40, or *one-fortieth* part of the population died every year; in 1821 the proportion was 1 in 58. It follows, that, out of any given number of persons, 1000 or 10,000, scarcely more than two deaths take place now for three that took place in 1780, or the mortality has diminished 45 per cent. The parochial registers of burials in England, from which this statement is derived, are known to be incorrect; but as they continue to be kept without alteration in the same way, the errors of one year are justly conceived to balance those of another, and they thus afford *comparative* results, upon which considerable reliance may be placed.

"A community is made up of persons of many various ages, among whom the law of mortality is very different. Thus, according to the Swedish tables, the deaths among children from the moment of birth up to 10 years of age, are 1 in 22 per annum; from 10 to 20, the deaths are only 1 in 185. Among the old, again, mortality is of course great: From 70 to 80, the deaths are 1 in 9; from 80 to 90, they are 1 in 4. Now, a community like that of New York or Ohio, where marriages are made early and the births are numerous, necessarily contains a large proportion of young persons, among whom the proportional mortality is low, and a small proportion of the old, who die off rapidly. A community, in which the births are numerous, is like a regiment receiving a vast number of young and healthy recruits, and in which, of course, as a whole, the annual deaths will be few compared with those in another regiment chiefly filled with veterans, though among the persons at any particular age, such as 20, 40, or 50, the mortality will be as great in the one regiment as in the other. It may thus happen, that the annual mortality among 1000 persons in Ohio may be considerably less than in France, while the *Expectation of Life*, or the chance which an individual has to

reach to a certain age, may be no greater in the former country than in the latter; and hence we see that a diminution in the rate of mortality is not a certain proof of an increase in the value of life, or an improvement in the condition of the people.

"But the effect produced by an increased number of births is less than might be imagined, owing to the very great mortality among infants in the first year of their age. Not having time for the calculations necessary to get at the precise result, which are pretty complex, we avail ourselves of some statements given by Mr Milne in his work on Annuities. Taking the Swedish tables as a basis, and supposing the law of mortality to remain the same for each period of life, he has compared the proportional number of deaths in a population which is stationary, and in one which increases 15 per cent in 20 years. The result is, that when the mortality in the stationary society is 1 in 36·13, that in the progressive society is one in 37·33, a difference equal to 3½ per cent. Now, the population of England and Wales increased 34·3 per cent. in the 20 years ending in 1821, but in the interval from 1811 to 1821 the rate was equivalent to 39¼ per cent. upon 20 years; and the apparent diminution of mortality arising from this circumstance must of course have been about 8½ per cent. We are assuming, however, that the population was absolutely stationary at 1780, which was not the case. According to Mr Milne (p. 437), the average annual increase in the five years ending 1784 was 1 in 55; in the ten years ending 1821, according to the census, it was 1 in 60. Deducting, then, the proportional part corresponding to the former, which is 3¼, there remains 5¼. If Mr Milne's Tables, therefore, are correct, *we may infer that the progressive state of the population causes a diminution of* 5¼ *per cent. in the annual mortality*—a diminution which is only *apparent*, because it arises entirely from the great proportion of births, and is not accompanied with any real increase in the value of human life.

"A much greater change—not apparent but real—was produced by the introduction of vaccination in 1798. It was computed, that, in 1795, when the population of the British Isles was 15,000,000, the deaths produced by the smallpox amounted to 36,000, or nearly 11 per cent. of the whole annual mortality. (See article *Vaccination* in the Supplement to Encyclopædia Britannica, p. 713.) Now, since not more than one case in 330 terminates fatally under the cowpox system, either directly by the primary infection, or from

the other diseases supervening, the whole of the young persons destroyed by the smallpox might be considered as saved, were vaccination universal, and always properly performed. This is not precisely the case, but one or one and a half per cent. will cover the deficiencies; and we therefore conclude, *that vaccination has diminished the annual mortality fully nine per cent.* After we had arrived at this conclusion by the process described, we found it confirmed by the authority of Mr Milne, who estimates, in a note to one of his tables, that the mortality of 1 in 40 would be diminished to 1 in 43·45, by exterminating the smallpox. Now this is almost precisely 9 per cent.

"We stated, that the diminution of the annual mortality between 1790 and 1821 was 45 per cent., according to Mr Rickman. If we deduct from this 9 per cent. for the effect of vaccination, and 5 per cent. as only apparent, resulting from the increasing proportion of births—31 per cent. remains, *which, we apprehend, can only be accounted for by an improvement in the habits, morals, and physical condition of the people.* Independently, then, of the two causes alluded to, the value of human life since 1780 has increased in a ratio which would diminish the annual mortality from 1 in 40 to 1 in 52½—a fact which is indisputably of great importance, and worth volumes of declamation in illustrating the true situation of the labouring classes. We have founded our conclusion on data derived entirely from English returns; but there is no doubt that it applies equally to Scotland. It is consoling to find, from this very unexceptionable species of evidence, that though there is much privation and suffering in the country, the situation of the people has been, on the whole, progressively improving during the last forty years.* But how much greater would the advance have been, had they been less taxed and better treated! and how much room is there still for future amelioration, by spreading instruction, amending our laws, lessening the temptations to crime, and improving the means of correction and reform! In the mean time, it ought to be some encouragement to philanthropy to learn that it has not to struggle against invincible obstacles, and that even when the

* Prior to the passing of the Registration Act there were no trustworthy data for determining the rate of mortality in England. The Reports of the Registrar-General show that the actual rate in all England and Wales is now 1 in 45, but that it varies in urban and rural districts from 1 in 30 to nearly 1 in 70. These Reports afford ample evidence that the condition of the people is improving.—Ed.

prospect was least cheering to the eye, its efforts were silently benefiting society."

The following comparative table of the average duration of life at Geneva, during 260 years, appeared in the public journals in 1829. The growing improvement which it exhibits affords a striking proof of the benefits resulting from the progress of civilisation and the useful arts :—

	Average duration. Years.	Months.
From 1560 to 1600, . . .	18	5
1604 to 1700, . . .	23	5
1701 to 1760, . . .	32	
1761 to 1800, . . .	33	7
1801 to 1814, . . .	38	6
1815 to 1826, . . .	38	10

It has been mentioned to me that Dr Monro *secundus*, in his anatomical lectures, stated, that, as far as he could observe, the human body, as a machine, is perfect,—that it bears within itself no marks by which we can possibly predict its decay,—that it is apparently calculated to go on for ever, and that we learn only by experience that it will not do so ; and some persons have conceived this to be an authority against the doctrine maintained in Chap. V., Sect. 2, that death is apparently inherent in organisation. In answer I observe, that if we were to look at the sun only for one moment, say at noon, no circumstance in its appearance would indicate that it had ever risen, or that it would ever set ; but if we had traced its progress from the horizon to the meridian, and down again till the long shadows of evening prevailed, we should have ample grounds for inferring, that, if the same causes that had produced these changes continued to operate, it would undoubtedly at length disappear. In the same way, if we were to confine our observations on the human body to a mere point of time, it is certain that, from the appearances of that moment, we could not infer that it had grown up by gradual increase, or that it would decay ; but this is the case only because our faculties are not fitted to penetrate into the essential nature and dependences of things. Any man who had seen the body decrease in old age, could, without hesitation, predicate, that, if the same causes which had produced that effect went on operating, dissolution would at last inevitably occur ; and, if his organ of causality were well developed, he would not hesitate to say that a *cause* of the

decrease and dissolution must exist, although he could not tell by examining the body what it was. By analysing alcohol, no person could discover, independently of experience, that it would produce intoxication ; and, nevertheless, there must be a cause in the constitution of the alcohol, in that of the body, and in the relationship between them, why it produces this effect. The notion of Dr Monro, therefore, does not prove that death is not an essential law of organisation, but only that the human faculties are not able, by dissection, to discover that the cause of it is inherent in the bodily constitution itself. It does not follow, however, that this inference may not be legitimately drawn from phenomena collected from the whole period of corporeal existence.

The sanitary measures which have been enacted by Parliament with the strong support of the periodical press, afford striking evidence of the progress of the public mind in relation to the laws of health.

No. X.—Object of the Author of Nature in instituting Suffering and Death.

Text, p. 279.

This subject has perplexed reflecting minds in all ages, and the difficulty attending it has been increased rather than diminished in modern times, by the discoveries of Geology, which prove that these evils existed before Man became an inhabitant of the globe. A scientific friend who has taken much interest in this work, and who sees strongly the difficulties attending these questions, has sent me the following communication. He says :—

" Throughout organic nature, in our own day, while the *species* is kept up by some more fortunate or favoured individuals, a vast number of *individuals* die prematurely ; or, from one injurious cause or other, never attain the full growth and health of their species. The lower we go in the scale of development, the more truly is this the case, so that Man, instead of being at present an unfortunate exception, is, in fact, the fortunate or favoured exception. To put the matter in the language of an Assurance Office, the human species is a better life than any (or most) of the other species. In the 'Constitution,' you go on the contrary assumption, but I apprehend my present statement to be the one which is *true to nature*. This is something of a dilemma for you. And yet, the fact may perhaps admit of a construction favourable to your own theories in their essentials, as I will presently suggest.

"Throughout organic nature, we see that one species preys upon another, inflicting pain of various kinds, of various degrees of intensity and duration, mental and bodily. And among individuals of the same species, we find robbery, bullying, beating, and murdering, pretty much as we do among men, allowing for the greater power of mischief possessed by Man through his greater endowments of mind.

"The direct inference from these facts, as a whole, seems to be, that what has been and is now, will continue to be; and that, if there is a design and purpose, it is *intended* to be for some purpose far more general and comprehensive, than the instruction of one race or species among so many others, and inhabiting the earth (as yet) so small a fraction of the time.

"There is, however, a line of argument more favourable to your own views; but in the compass of a letter I can only indicate the leading links, *first*, as facts in nature; *secondly*, as facts in argument.

"1*st*, Comparing the present organic inhabitants of the earth with those in periods long past, as shown to us by geological research, and also comparing different past periods, it is obvious that Nature has not only created, but also destroyed, numerous species.

"In destroying the earlier species, Nature appears to have quashed them gradually, and gradually introduced fresh species to take their places.

"As far as we see, the earlier species were those only of more simple organisation, and especially those having less endowment of mental qualities.

"Such simply organised and endowed species have continued to be created up to the present state of things. But, along with these, there has been a gradual introduction among them of other species more complete in organisation, and superior in nervous and cerebral (mental) endowment.

"Apparently the race of Man is one of the latest created species —a species scarce equalled in complexity of physical structure by any other, and also immeasurably beyond any other in mental endowments.

"The difference between Man and other organic beings is this. With them, the experience of the individual dies with the individual, being of no value to the species, which remains as it was, neither more nor less capable of adapting itself to external circum-

stances, whether these change or remain the same. The experience of the individual man can be communicated pretty fully to his fellows, can accumulate with age, and be converted into a sort of *experiential capital* for the use of the race or species.

"This experiential capital, constantly accumulating, gives the power to Man of adapting himself better and better to external circumstances, and of accommodating himself to them as they change. No limit can be discerned to the accumulation of the experiential capital, and therefore no limit to Man's power of adapting and accommodating himself to external circumstances.

"In all analogies traced between Man and other organised species, and in all inferences founded thereon, this one wide difference must be brought in to qualify, to limit, or extend. But it is in the *species* Man, infinitely more than in the *individual* Man, that the difference operates. Although superior to other animals, his personal superiority is not indefinite, and like them he is individually the patient who must helplessly submit to external circumstances. It is in that which he draws from the experiential capital of the race that his grand superiority is found. This makes little addition to his definite personal powers ('definite constitution'), but it makes those personal powers available and manageable to an indefinite extent—an extent constantly increasing from generation to generation.

"In as far as Man is an individual animal, the closest analogies may be traced with other animals. The course of nature which they run, he must run too. *Mutatis mutandis*, what Nature does with them Nature will do with him. But in so far as Man is an item of the species, which is obviously running a different course from that of other species (namely, accumulating an experience as an applicable and bequeathable power), in so far he must be contrasted against other animals, for Nature does not with him as with them.

"2*d*, Revert now to our starting point, and see how a collateral line of argument will apply in the case of that sacrifice of life, and individual suffering, which has prevailed through the past and present course of nature.

It is obvious that Nature has sacrificed the earlier species, and made room for the later species—those who contend for design and purpose may say, 'in order to make room for the later species.' Assuming (as seems scientifically justifiable) that the earlier species

were not annihilated by a sudden fiat, but gradually worn out, through increasing inadaptation to external conditions, an enormous amount of individual suffering may (if not must) have occurred.

"The sacrifice of those earlier species was, on the whole, the sacrifice of the inferior for the sake of the superior species. At all events, it made place for the superior. And though many equally inferior species did also succeed, and many are still existent, these were and are subservient to the comfort of the superior, at cost of suffering and death to themselves as individuals.

"It is impossible to look at nature in our own time, without seeing that individuals are freely sacrificed for others. Individuals of one species afford food to those of another. A constant struggle is going on between individuals of the same species, in which the stronger triumph, and the weaker fall victims. The latter are killed, or die, or live under more of the suffering, and less of the enjoyment of life.

"Our concern is with the one species, Man. With other organic beings, the course of Nature has been to sacrifice the inferior for the benefit of the superior. Species have been (perhaps still are) sacrificed for other species more favoured. Individuals have been and are sacrificed in countless numbers for other individuals more favoured—that is, superior in some mode. The history of mankind shows, that individuals of the human species have constantly been sacrificed or injured for the advantage of other individuals. Notwithstanding many apparent anomalies, Nature has kept on the same course here—namely, that of sacrificing the inferior to the superior, the weak to the strong. The red and black races are sacrificed to the white; the feebler or inferior whites to the stronger or superior. And it is an undeniable fact, that individuals are now daily suffering, even unto death, while other individuals are benefited by the warnings and instruction thus furnished to them.

"There is, then, nothing at variance with the usual course of natural events, in a belief that the sufferings of some are actually intended to instruct, even though the instruction (that is, the benefit) falls chiefly or solely to the lot of other individuals of the human species.

"But is this always to continue until the human species, in its turn, gives place to some other species? The one peculiarity which distinguishes Man, as a species, from all other species—viz., the mental power of funding his experience into capital, available to

all succeeding individuals—arrests the analogy here. As the experiential capital accumulates, there may be (there must be?) less and less necessity of sacrificing individuals for the benefit (instruction) of other individuals; while the interest which any shareholder may draw from the joint-stock capital of experience will enable him so much the more easily and certainly to preserve himself from being made into a sacrifice. Moreover, part of the experiential capital will probably be that physiological knowledge which may enable parents to improve the organic development of their offspring, so as to keep raising individuals up towards the highest possible type, and thus decreasing the inferior specimens of the race, until no very bad ones remain.

"Under this view, there is no need to distort or explain away the facts of nature. They fully harmonize with your creed about the mode of instructing the human race by individual suffering and destruction. But the one difficulty will still remain—namely, that as Man is the only species instructed thereby, 'What is the ultimate purpose of all the sufferings and destruction of all other organised individuals, for time unreckonable?' The analogy is too close to warrant the assumption of two different purposes, one applicable only to Man, and one only to other species. Are there two purposes? one applicable to the progressive species Man, the other applicable to the non-progressive species, and to Man so far as he is analogous with them? If so, What *is* the latter purpose?"

It is obvious that other objects than human instruction must have been contemplated by the great Author of the universe when He subjected animals to pain and death before Man existed, and when He continues the same system in regions beyond the reach of Man's intelligence, and the control of his power. In the text, I have endeavoured to show, that, in regard to Man, suffering is chiefly incidental; that it is not the *object* of any portion of his organisation; and that, by obedience to the natural laws, it may, in a great degree, be avoided. In regard to the lower animals, also, it appears to me that the state of suffering is not the normal but the incidental and exceptional condition of their being; and that destruction of individual life, which forms such an important element in the system of nature, opens the way, on the whole, directly and indirectly, to enjoyments which more than compensate the evils attending it.

No. XI.—The Treatment of Criminals.

Text, p. 303.

The author's *Remarks on Criminal Legislation and the Practice of Prison Discipline* being now out of print, the editors may here mention, what was stated in the note prefixed to it, that it is an expanded edition of an article from his pen, which appeared in the *Westminster Review* for April 1854. Prefixed to the pamphlet is the following statement of opinion as to the principle on which it is based :—

"Having been requested to state our opinion of the annexed pamphlet, we, without being understood to become answerable for the accuracy of all the facts, or the soundness of all the reasonings which it contains, have no hesitation in giving our opinion that the fundamental principle which pervades it—namely, *that Criminal Legislation and Prison Discipline will never attain to a scientific, consistent, practical, and efficient character, until they become based on Physiology, and especially on the Physiology of the Brain and Nervous System*—is a sound principle ; and, most strongly entertaining this conviction, we recommend Mr Combe's views to the consideration of all who take an interest in these momentous subjects.

"B. C. Brodie, Bart., D.C.L., F.R.S., Sergeant Surgeon to the Queen, Surgeon to H.R.H. Prince Albert, &c., &c.

"James Clark, Bart., M.D., F.R.S., Physician in Ordinary to the Queen and H.R.H. Prince Albert, &c., &c.

"Henry Holland, Bart., M.D., F.R.S., Physician in Ordinary to the Queen and H.R.H. Prince Albert, &c.. &c.

"Richard Owen, LL.D., F.R.S., Professor of Physiology to the Royal College of Surgeons, London, &c., &c.

"John Forbes, Knt., M.D., D.C.L., F.R.S., Physician to the Queen's Household, and Phys. Ext. to H.R.H. Prince Albert, &c., &c.

"John Conolly, M.D., D.C.L., Consulting Physician to Middlesex Lunatic Asylum, Hanwell, &c., &c.

"William B. Carpenter, M.D., Examiner in Physiology and Comparative Anatomy, University of London ; Prof. of Med. Jurisprudence, University College, London, &c., &c.

"London, *April* 1854."

The editors also think it due to the author to quote the follow-

ing note, prefixed by Mr Baron Alderson to a part of his Charge to the Grand Jury of Yorkshire at the Winter Assize 1854, which he published as a pamphlet *On the Reform of Youthful Criminals by means of Reformatory Schools, under* 17 *and* 18 *Vict., c.* 86; London 1855 :—

"I have been induced to print the following observations, which formed the concluding part of my charge to the Grand Jury of the county of York at the late Winter Assize, in the hope of drawing attention to the very valuable work of Mr Combe, called, 'The Principles of Criminal Legislation,' which I have read with great interest, and, I hope, with some advantage.

"Without agreeing entirely with the speculations of that gifted writer, I must candidly say, that I think his work contains most valuable materials for careful thought, and observations which every sincere reformer of our criminal population ought to weigh well and deeply consider."

No. XII.—On Suffering Inflicted under the Natural Laws.

Text, p. 303.

In 1847, when fever, the consequence of destitution, was raging in Ireland, and was also very prevalent in Liverpool, Glasgow, and other towns exposed to the immigration of the Irish people, the following rules were presented and explained to the lower orders of the inhabitants of Glasgow :—

"*Rules to be very Carefully Observed, and never Relaxed, by all that would Preserve Health, and avoid that Dreadful Scourge, Typhus Fever.*

"*General Rule.*—Temperance, Cleanliness, *and* Breathing Pure Air, *are three of the surest means of securing health, and preventing attacks of Typhus Fever, or any other disease.*

"1. Very often open the window of a room, and at the same time the door, and let the air go through. You need not sit in the draught; *that* is dangerous. The windows of common stairs and passages should always be half open. Is this the case in yours?

"2. On getting up in the morning, air the room well in the way just mentioned; let the draught of air pass *through the bed or beds* for at least half an hour before they are made up. Making up a warm or ill-aired bed will itself produce disease. Hang the blankets

before the fire every now and then. Keep bed, bedding, and bedstead as clean as possible.

"3. If possible, never wear in the day the shirt or shift you sleep in. Air both well, when taken off, in the air draught. Never wear them more than a week.

"4. On getting out of bed, dip a sponge or towel in water and give a rapid wash with it to the whole body, rubbing it dry with a hard rough towel. Cold water is best, but warm water may be used, if cold is disliked. Accustom your children not to be afraid of the cold water sponge. They will come to like it, and to apply it themselves. If your employment is dirty, wash at night also. Wash your children all over every night, and, at least, their faces, hands, and necks every morning.

"5. Sweep out your rooms, passages, and stairs every day, and wash them once a-week. Whitewash at least twice a-year. The trouble and expense are nothing compared with the great benefit to your health.

"6. Do all you can to avoid hanging your washings to dry in the rooms you live in. Nothing is more dangerous to health. Soapsuds, foul water, and filth, should be removed from the room without delay.

"7. Use as much water in the house as you possibly can. Carrying it in is laborious, but the labour will be well repaid in health and comfort. The time is at hand when every house, however humble, will have its own water-tap always giving water, so that no cistern or water vessels will be needed.

"8. *Never live on poor food*, that you may save the money for drink. Simple directions for thrifty and good cooking will soon be sent to you. Strive to learn the best ways in the mean time from neighbours who can cook well.

"9. Lose no opportunity of walking and taking exercise in the open air.

"10. When typhus fever, smallpox, or scarlet fever is in your house, be sure to keep the rooms well aired, and separate as much as you can the healthy part of the family from those who are ill. Do not enter your neighbours' houses, or allow idle gossippers to come into yours; and do not go to church or meetings, or send your children to school. You thus prevent the spread of the disease. Carelessness in these things, we know, is one great cause of fever spreading amongst the poor.

"11. Never, unless duty calls, go into a house where there is disease; and, when you are obliged to do so, never enter *fasting* or when warm with walking; avoid the patient's breath, and stay as short a time as possible.

"12. Whether the patient dies or recovers, be sure to wash most carefully every article of clothes or bedding he has used. Get a bottle of solution of chloride of lime from a druggist; often sprinkle the bed and floor with it, and keep a plate of it on the floor. Do all in your power to avoid keeping the dead in the same room with the living; never have any '*wake*;' and bury without delay.

"*Lastly*, Take a very serious thought on the subject of WHISKY—the grand source of poverty, want, and disease—the grand destroyer of health, of morals, of character, of home, of comfort and peace. Ask yourself this question—*Is the enjoyment of the dram or the tumbler a good bargain for the loss of all these?* Sensible men are taking this thought. Many a young man is resolving to have done with drinking, and enjoy life *really*, which no one does who drinks. He lives a wretched life: and mark this, he must for ever continue poor. NO DRINKER EVER RISES ABOVE THE LOWEST POVERTY. Mark this, too, TYPHUS FEVER FINDS OUT THE DRUNKARD AND FASTENS ON HIM.

"We earnestly entreat you to comply to the utmost of your power with these simple rules. Use the means God gives you. Make no excuses about want of time and opportunity. Show that you will do all you can for yourselves, and depend upon it others will aid you. But while you obstinately refuse to keep your houses and your persons clean, you cannot expect your fellow-creatures to go near you, risking health and life itself in the vain attempt to help those who will not help themselves. Begin, then, *this very day* to clean yourselves, your clothes, and your houses, and let fresh air in by every door and window.

"JOHN AITKEN, M.D.
WILLIAM BROWN, M.D.
J. A. EASTON, M.D.
ANDREW FERGUS, Surgeon.
WILLIAM FINLAY, M.D.
JOSEPH FLEMING, Surgeon.
WILLIAM HALL, Surgeon.
J. HAY, Surgeon.
WILLIAM M'DONALD, M.D.
ANDREW M'EWAN, Surgeon.
GEORGE M'EWAN, Surgeon.
JOHN M'EWAN, M.D.
JOSHUA PATERSON, M.D.
ROBERT THOMSON, M. D.
J. G. TORREY, Surgeon.

"GLASGOW, *June* 1847."

"The undersigned, in consequence of the great prevalence of fever, recommend instant attention to those sanitary means which medical skill has prescribed for preventing its increase, and which, by the Divine blessing, may prove effectual in arresting its progress."*

The distribution of these rules was a wise and a prudent measure; but how much more effectually would they have been observed, if the people had been taught in primary schools to understand the laws of health, and had been trained by the clergy to reverence those laws as Divine institutions!

No. XIII.—Religious Life.

Text, p. 307.

It has been said of this work, that "the gospel of the 'Constitution of Man,' as a formula for 'a religious life,' or what is generally understood by that, is a mistake. As a *sole* guide of life, it can produce nothing but an enlightened egotism, balancing things by the laws of mutual compensation. Rewards and punishments would again be the motive powers, not love and obedience,—which are the only efficient religious motives. There would be no room for a higher life."

The doctrine which I have aimed at teaching in the preceding pages is the very reverse of that which it is here represented to be. The grand aim of the work is to show that moral and religious sentiments exist, that they are supreme in authority, that in their objects *they are all disinterested*, and that their activity confers the highest enjoyment of which human nature is capable. This is certainly widely different from teaching merely an enlightened egotism. Instead of leaving no room for "a higher life," it tends directly to render the moral and religious sentiments the presiding *motives* and *guides* of all the actions of our life.

The real object of the present work is correctly stated by an enlightened critic in the *Liverpool Mercury*:—"Mr Combe pleads for the reunion of science and religion, the separation of which has been so disastrous. The religionist has shunned science as 'carnal' knowledge, forgetting that he virtually thus declared the universe

* This recommendation was subscribed by the magistrates, and by clergymen of all denominations in Glasgow.

to be without a God. The philosopher has turned coldly away from religion, forgetting that he thus robbed science of its truest dignity, and Man himself of his noblest elevation. On one side we have him who consecrates a few things, on the other we have him who desecrates all things. One sees God in certain things, and not in others—there, and not here; the other virtually sees God in nothing—neither there nor here. A new school rises which sees God in all things, and everywhere,—which makes sacred all things, and times, and places, by tracing in all the handiwork of the all-wise, all-powerful, and all-good Creator. The barrier between *sacred* and *profane* is broken down. The Deity is no longer banished from his own creation into distant times and far-off places. His presence, and His power, and His law, are here, and now. For the practical results, and for the illustration of this great truth, we must refer the reader to Mr Combe."

It is true that I have endeavoured to shew, also, that the external world is arranged in harmony with the supremacy of the moral and religious sentiments, and that, by the bountiful ordination of God, the consequences of acting under the enlightened dictates of these sentiments *are beneficial;* in other words, that "the higher life" is the most advantageous for Man in every respect,—*first*, as the most pure, elevated, and enjoyable in itself, because it brings us most directly into communication with God, and into harmony with His scheme of providence,—and, *secondly*, because it is the only means by which, under that scheme, we can secure solid, consistent, lasting, and beneficial gratification to our selfish propensities. The Scripture also declares that "godliness is profitable unto all things, both in this life and that which is to come." It is a perversion of the whole work, therefore, to say that, because I maintain that God has rendered religion and morality not only delightful in themselves, but also the most direct and legitimate avenues to temporal prosperity, I therefore recommend them *merely* for the sake of that temporal prosperity. Bishop Butler and Dr Thomas Brown advert to a similar objection which had been stated by some writers against the disinterested character of benevolence, and answer it by observing, that, although God has made a highly pleasing emotion to accompany the vivid action of this sentiment, it is a great error to maintain that the *desire of this pleasure* constitutes the *motive* of the benevolent man in doing a generous action.

The doctrine of this work, when fairly interpreted, does not ex-

clude "the higher life," or cultivate merely an enlightened egotism. Instead of "balancing things by the laws of mutual compensation," it teaches that nothing on earth *can balance* the evils of departures from the dictates of the moral and religious sentiments. I repeat, however, that to elucidate fully the application of these principles to a religious life, a separate treatise would be necessary; and I hope that some religious and enlightened author may be induced to write such a work.

Many religious persons certainly are dissatisfied with this work, but perhaps this may be accounted for without the whole blame necessarily lying on my side. Hitherto, religion has been so thoroughly separated from science, and from all consideration of the course of God's providence in nature, that in its present form it is much more emotional than practical. Suppose, for example, a society of mothers to be instituted to pray for their children. Two modes of conducting such an association might be conceived. *First*, The mothers might meet to receive and communicate instruction concerning the best method of complying with the order of God's secular providence, which regulates the health, and also the moral, religious, and intellectual development of children; to express their deep sense of the benevolence and wisdom of the laws according to which His providence acts; and to pray for His blessing on their endeavours to discover those laws, to reverence them, and to carry them into practical effect. This would be to act in accordance with the principles of this work. Or, *secondly*, the mothers, at their meetings, might pray to God to illuminate their minds by the influence of His Spirit, in regard to the treatment of their children, and to bless their offspring from His overflowing grace, without any direct reference to their own obedience to the laws by which He regulates the health and welfare of the young. The latter course, in my view, would be erroneous, and could lead to no beneficial results.

A key to the mental condition of many religious persons is afforded by understanding the effects of the activity of the faculties from *internal* causes. Each organ being active, fills the mind with the emotions or ideas which it is its function to form; and, in all ages, individuals in whom this activity has been powerful, have been prone to mistake both its source and its character. The heathen mythology appears to have been a personification and deification, chiefly of the lower faculties of the mind. Thus, Venus was the personi-

fication and deification of amativeness ; Mars of combativeness and destructiveness ; Mercury of secretiveness and acquisitiveness ; Vulcan of constructiveness ; Juno of love of approbation ; Hercules of firmness ; Minerva of eventuality and causality ; Apollo of ideality, tune, and time ; and so forth. In modern times, some men ascribe the internal impulses of amativeness prompting them to seduction, or of secretiveness tempting them to cheat, or of acquisitiveness to steal, to the instigations of the devil ; while all intense, pure, holy, and hopeful emotions, originating in the internal activity of the moral and religious sentiments, are ascribed by them to the direct influence of the Holy Spirit.

The doctrine of the influence of the Holy Spirit belongs to Theology, and not to science, and therefore I do not treat of it ; but I beg leave to observe, that when one has made himself acquainted with the situations and functions of the different mental organs, and extensively observed their action in different degrees of development, and in health and disease, it is not difficult to perceive that there are persons who place religion too much in the mere experience of inward emotions. It is so delightful to abandon oneself to the impulses of these grand and elevating feelings, and they are in themselves so spiritual, pure, and heavenly, that when the organs are large, and the temperament active, the temptation to revel in them, and to mistake their glow for religion, is such as should not be overlooked. As, however, the organs of these emotions form parts of the brain, are connected with the intellectual organs, and are subjected to all the organic laws which influence the other organs of the body, there is no warrant for believing them to be exempted from the obligation of submitting themselves, in their action, to the order of God's providence established in nature. Yet it is the demand, so much insisted on in this work, that they should be thus subjected, that is offensive to many religious persons. They desire, if not to place these emotions above nature, at least to claim for them an independent sphere of action, uncontrolled by Nature's laws. They ask, for example, Where do the laws of outer nature teach us the self-negative faith "which casteth its bread on the waters" in the confidence of finding it after many days? These laws certainly do not teach us that if a man, yielding to the internal activity of his organs of hope, wonder, and veneration, should throw his bread upon the waters, regardless of the course of God's natural providence, he would be likely to find it again ; on the contrary,

they proclaim that he would run a great risk of never seeing his bread more. But they do not dissuade him from "casting his bread on the waters," if he attend to the order of that providence. If he fail to do so, he has no right to expect to find it again.

The chief difference, then, between the views of those who advocate the "inner light," "religious life," "spiritual life," or by whatever other name they choose to call it, and the doctrine of the present work, lies in this. They appear to me to assume the sufficiency of these internal lights for their guidance. If not, they believe that the study of the Scriptures, and the aid of a supernatural influence, which they think is therein promised to them, are sufficient to guide their emotional faculties to good, irrespective of knowledge of, and obedience to, the laws of nature; which opinions I regard as unwarranted. In consequence, however, of their belief in their own views, they are averse to acknowledge the divine authority of reason and of the laws of nature revealed by science; while my doctrine would subject all the faculties to these laws. In Eastern countries, the combined influence of the climate, opium, and probably a large development of the organs of wonder, causes the "inner life" to reach its acmé. There, mysticism, fanaticism, and other "isms," reign in honour and strength. In the United States of North America, also, manifestations of the same condition of mind are presented in the camp-meetings; and an instance of it lately occurred in the establishment of the sect of the Mormons, who continue to believe in the inspiration of a self-styled prophet named Joe Smith, even after he has been killed. It appears to me that there is no medium between admitting the sufficiency of every man's inward lights, when aided by Scripture, to guide him to religion, virtue, and happiness; and limiting this sufficiency by the condition that these lights must act *also* in obedience to, and in conformity with, the ordinary course of God's secular providence. If religious men were to take this view, they would object less to the present work.

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