the conditions of life, the insufficient intellect completely breaks down, and insanity is ushered in.

This closes the review of the pathological appearances in insanity, and the result which is deducible from the whole foregoing observations is so evident, that it is scarcely necessary to express it. The pathological lesions of the cerebral tissue are not the final and ultimate causes of insanity; for in all cases it is necessary to assume a special and specific irritability of the nervous tissue peculiar to the insane. This granted, they then assume their legitimate position as secondary causes, and take their place with the pathological phenomena of the body in general. In making this assumption, it will be found that medical psychology takes up no position inconsistent with the facts we possess in relation to the causation of disease. In tracing back a disease to its ultimate source, we never get beyond the exciting or secondary causes. We have established pretty clearly that almost every individual and every family has a "predisposition" to some special malady, constitutional or acquired. There the "problem begins," and we wisely fall back upon the exciting causes which develop this "predisposition" (as we in our ignorance call it) into active disease. The same holds good in insanity; there is an ultimate and peculiar idiosyncrasy, constitutional or acquired, which, under certain conditions, such as congestion or anæmia, is rapidly developed into mental disease, and these abnormalities in nutrition, in their turn, give rise to pathological alterations of the brain-substance which deprave or destroy the functions of the mind.

The Genesis of Mind. By Henry Maudsley, M.D.

(Continued from vol. vii, p. 494.)

It might seem unaccountable that, notwithstanding the common sense of mankind has in all ages recognised the existence of intellect in animals, certain philosophers should always have been found to repudiate the vulgar opinion; were it not that experience proves there is much truth in the description which Condillac gives of the philosophers, as "men who love much better an absurdity that they imagine than a truth which all the world adopts." Though Plato tells us that in the golden age men derived all their knowledge from communication with beasts, and though the little understood and much misunderstood Egyptians of old paid divine honours to certain animals—not, as is sometimes superficially concluded, on account of their brute wisdom, but really

as living symbols of Divine intelligence, which they embodied and instinctively displayed—yet the Cartesian philosophy actually denied sensibility to animals, and designated them living machines. For such unmerited ignominy they have, however, been more than compensated by writers who, like M. Charles Bonnet, maintain the existence of immortal souls in them, and predict for them a future world and a happier destiny.* The ancients would appear generally to have entertained a somewhat similar opinion; for, without referring to the doctrine of metempsychosis, we have the authority of Homer, who represents Orion as chasing the souls of stags over the plains of hell. And modern instinct, when not perverted by the prejudices and conceit of learning, never fails to acknowledge the rationality of brutes. According to a Scandinavian aphorism, the bear has the strength of ten men and the sense of twelve; and the Red Indians are so impressed with the intellectual powers of this animal that, whenever they have killed one, they scrupulously strive to appease its manes with various important ceremonies. They deck out its head with various trinkets, and make a long speech in which the courage of the departed is praised, its living relatives profusely complimented, and a hope expressed that the conduct of its slayer has been satisfactory both to itself and them.† The intelligence of civilisation may dismiss with a smile of pity or contempt such barbarous displays; but the most advanced intelligence will not forget that there is some substratum of truth beneath every superstition, by virtue of which it lives. As no nation ever yet worshipped a piece of carved wood or chiselled stone otherwise than as a symbol of the Great Incomprehensible, by which both barbarous and civilised men are surrounded; so we may rest satisfied that the Red Indian only labours to propitiate the ghost of the bear because he has at times found, to his cost, that its intelligence has surpassed his own. The extremes of attributing too much and too little intelligence to animals will, however, be alike avoided by that sincere and unbiassed observation which, while discrediting all exaggerated theories, willingly recognises the undoubted existence in them of intelligence in its rudimentary form, and strives to point out the evidences of its gradual development through them.

* "Are not these dumb friends of ours, persons rather than things? Is not their soul ampler, as Plato would say, than their body, and contains rather than is contained? Is not what lives and wills in them, and is affectionate, as spiritual, as immaterial, as truly removed from mere flesh, blood, and bones, as that soul which is the proper self of their master?" ('Horæ Subsecivæ,' 2nd series, by J. Brown, M.D.)

"Who knoweth that the spirit of man goeth upward, and that the spirit of the beast goeth downward to the earth?" (Ecclesiastes, c. iii, v. 21.)

"There is in every animal's eye a dim image and gleam of humanity, a flash of strange light, through which their life looks out and up to our great mystery of command over them, and claims the fellowship of the creature, if not of the soul." (Ruskin.)

† 'Natural History of Mammalia,' Rev. J. G. Wood.

As we carry investigation upwards through the mammalia, a very marked advance is observable in the development of the cerebrum. Commencing with the simple brain of the marsupials, which is destitute of convolutions, and even inferior to that of the parrot, we ascend quite gradually upwards to the largely convoluted brain of the monkey, which most nearly resembles that of man. A mean comparison of the weight of the brain to that of the body in mammals, birds, reptiles, and fishes, will show strikingly the great increase which takes place in that organ amongst the higher animals. As a result of his own observations, and of a careful collection of the observations of others, Leuret concluded that the relation between the brain and the body was.

In fishes	as	1 to 5668
In reptiles		1 to 1321
In birds		1 to 212
In mammalia		1 to 186*

That the intelligence of the mammalia as greatly surpasses that of the animals below them as these figures would lead us to anticipate, there would be no difficulty in demonstrating, even if men were left out of consideration. But it is not desirable to leave men out, and so to violate nature by arbitrarily ignoring a progression which undoubtedly exists. Although in his cultivated state man may appear so far beyond any other animal in intelligence, that no figures representing the height or breadth or depth of his brain, as compared with that of the animal, will at all adequately express the important functional differences between them, yet as we trace human development backwards towards its origin these differences become less marked. Not only, however, is the Bosjesman infinitely less intelligent than the European, but his type of brain is of an inferior order; so that his intelligence, under the best circumstances, cannot possibly equal that of a well-developed European. Nature has pronounced him of a lower grade, and has assigned him the humble position of a link leading to something higher. It is true that information is yet wanting on the extent of variation exhibited by the brain among the different races of mankind; but such differences as there are between the highest and the lowest races are undoubtedly of the same order although less in degree than those which distinguish the human from the simian brain. The brains of savages seem, indeed, to remain for the present to prove that the gradual progression which is observable in the development of an individual brain has been the rule in the development of the brain of mankind; while there is every probability that as the individual organ passes out of the inferior into the superior state, so the inferior brain of the savage is inexor-

* 'Leuret,' op. cit., p. 423. These figures are here given for the purpose of a general illustration. They have not any special value, as Gratiolet has pointed out, because the relations of the different parts of brain are not taken into account.

ably doomed to pass away and give place to the superior organ, which exists in certain parts of the world. By a law of progressive development inferiority is extinguished in the species. And though the brain of a Bosjesman, being in harmony with its conditions in Africa, serves its purpose there, yet we have only to imagine it placed within the skull of an European in the circumstances of civilisation, and the result would be called imbecility or idiocy. Regarding the order of progression in nature, it would appear inevitable that it must sooner or later be superseded by the higher type of brain which exists upon the earth. Ages have elapsed while this process of replacement has been going on, and ages may elapse before it is completed, but the inference is none the less just on that account; for nature regards not time, and condenses into a single life processes which, at one time, have required epochs for their evolution. So great a potentiality has the fœtal brain of man, for example, that in the course of a few weeks it passes through and beyond all the stages of brain-development represented in the successively advancing orders or individuals of the mammalia. Similarly, also, when brought into the conditions of a favorable activity does the human brain reflect, as it were, in a year's time the various stages of advancing intelligence in the animal kingdom, and the ages of time which the geological records prove to have been necessary to the development of such intelligence therein.

In selecting examples of the intelligence of the mammalia, there is the greatest difficulty in determining where to begin and where to end; the illustrations are so many, so varied, and so interesting, that, overwhelmed by the number, and yet attracted by the interesting variety, the prospect of a judicious choice is hopeless. As the dog, of all animals, has been brought into the closest converse with man, and has thus been subjected to the most patient education, it affords the most striking instances of rational development, and even exhibits remarkable illustrations of a sort of moral feeling. Nevertheless, attentive observation will discover other individuals in the mammalian class which possess the rudiments of as great intelligence as the dog, but which, never having been so highly trained through generations, do not afford such remarkable exhibitions thereof as an animal which seems to have been educated to the utmost extent of its possibilities. The elephant appears to be one of the most gentle and intelligent animals by nature; Aristotle maintained that it surpassed all other animals in its power of comprehension, and it was thought worthy by the Eastern disciples of metempsychosis to receive the souls of the Indian emperors. Its character is gentle and peaceable; it lives on vegetable food, and, except at certain periods of the year when it is veritably mad, it never attacks but when provoked. In captivity it becomes, when treated with kindness and intelligence, a most valuable servant; and its keepers often maintain that it understands everything that is said to it. But so

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high an innate sense of justice has it, that it is well known to be a most dangerous thing to break faith with it; its vengeance is sure, and sometimes fatal. The tailor who, instead of offering the usual biscuit, mischievously pricked its trunk with his needle, was simply deluged with a shower of dirty water from the offended organ, but the life of him who cruelly treats the lordly brute is likely enough to be sacrificed to its anger. Some elephants are undoubtedly also highly sensitive to music, and will manifest by their expression and movements their sympathy with the tender or passionate character of the melody. But they are not animals which propagate in captivity, and, though eminently sociable and living usually in companies, when the time of love comes on, each male, accompanied by a female, retires to the depths of the forest, moved thereto, as it would seem, by a sentiment of modesty. Wherefore it is not possible with the elephant to accumulate the effects of education through generations, as is so usefully done with dogs. Not that any one of the latter animals ever transmits the actual results of its education to the progeny, but it scarcely admits of question that the acquired intelligence of the parent does impart an increased educability, within certain limits, to the offspring, and sometimes even implants itself as a new instinct in the constitution. The same law is seen in operation in a more marked manner and on a more important scale amongst mankind. Few, if any, believe that the individual Bosjesman or native Australian, though placed under the best European tuition, could possibly be educated to the average point of European intelligence; but it would be quite at variance with the view which man has of his nature and his destiny to suppose that the native Australian or the Bosjesman might not, by the influence of education and favorable conditions through many generations, be elevated to the grade of the ordinary European intellect.

What effect the influence of human reason working through generations might have on the elephant in developing the possibilities of its type, though interesting as a speculation, is not of great practical moment; for the examples of elephantine intelligence which already abound are of so remarkable a character as to excite much wonder that any one should be found content to refer them to instinct. Sir Emerson Tennant mentions a pair of elephants that were accustomed to labour together in piling wood, and which had been taught to raise their wood-piles to a considerable height by constructing an inclined plane of sloping beams, and rolling their logs up these. In the same work on Ceylon, he also tells of meeting face to face, in a narrow path, an elephant without any attendant, which was carrying a heavy beam of timber; it was grunting in a very dissatisfied way, because the narrowness of the path compelled it to bend its head constantly to one side in order to let the wood pass, and thus caused it much exertion and inconvenience. As the

pathway was too narrow to permit Sir Emerson, who was on horseback, to pass, the elephant flung down the timber and forced itself back into the brush-wood, so as to leave a clear passage. "My horse still hesitated; the elephant observed, and impatiently thrust himself still deeper in the jungle, repeating its cry of 'urmph,' but in a voice evidently meant to encourage us to come on. Still the horse trembled, and anxious to observe the instinct of the two sagacious creatures, I forbore any interference; again the elephant wedged himself further in amongst the trees, and waited impatiently for us to pass him, and after the horse had done so, tremblingly and timidly, I saw the wise creature stoop and take up his heavy burden, turn and balance it on his tusks, and resume his route, hoarsely shouting, as before, his discontented remonstrance." Here, at any rate, we shall not be inclined to dissent from the opinion of Locke, when he says, with reference to the question whether elephants and dogs think, that "they give all the demonstration of it imaginable, except only telling us that they do so."

Some will strenuously hold, and with much reason, that dogs do tell us that they think, or at any rate that they strive very hard to do so; and it must be impossible to look down into the intelligently beaming eyes of a pet terrier, without feeling at times a real pity for it—pity for its inability to express that which plainly it is eagerly panting to tell. And how joyous is the creature if its inarticulate eloquence be understood, how happy and abandoned in its delight! It seems as painful a thing for a dog not to be understood, or to be misunderstood, as it is for a mortal. "If Pliny's elephant repeating its lesson in the moonshine is not to be credited, nor Ptolemy's stag who understood Greek, nor Plutarch's dog who could counterfeit the very convulsions of death, nor that goose which was disciple to a philosopher, what shall we say to an ape that could play chess, or of another that had learnt some touches upon a guitar. But let who will judge of Francis the First's dog; that king, having lost his gloves as he was hunting, and having sent him in search of them, and he, after a tedious inquiry, returning without them, being reprimanded by his master, runs directly to Paris, and leaps up at a stall where he had formerly observed gloves hang out, and tears down a pair and carries them three leagues back again to the king."* We remark here in the dog an accurate comprehension of its master's injunctions, persevering efforts to fulfil them, grief of dog's mind at the master's displeasure on account of its want of success, an accurate remembrance of the place where similar gloves were exposed, and a determination to supply at any cost its master's necessities. Every one may imagine for himself the ideas or notions which must have passed through the dog's mind, and the order of their succession, in the accomplishment of its difficult task. In his interesting "History

* The reference is lost; but it was to some old book by a 'Gentleman of Quality.'

of Mammalia," the Rev. J. G. Wood, amongst other wonderful anecdotes, relates the following of a comical little dog which he met with, and which he believes to have been the barbet—a diminutive variety of the poodle. It was not larger than an ordinary rabbit, and was a most amusing and clever little animal, "readily picking up acquirements and inventing new accomplishments of its own. He would sit at the piano, and sing a song to his own accompaniment, the manual, or rather pedal part of the performance being achieved by a dexterous patting of the keys, and the vocal efforts by a prolonged and modulated howl. He could also 'talk' by uttering little yelps in rapid succession. Like all pet dogs, he was jealous of disposition, and could not bear that any one, not excepting his mistress, should be more noticed than himself. When his mistress was ill, he was much aggrieved at the exclusive attention which was given to the invalid, and cast about in his doggish brain for some method of attracting the notice which he coveted. It is supposed that he must have watched the interview between medical man and patient, and have settled in his mind the attraction which exercised so powerful an influence upon the physician; for just as the well-known carriage drew up to the door, Quiz got on a chair, sat up on his hind legs, and began to put out his tongue, and held forth his paw as he had seen his mistress do, and evidently expected to be treated in a similar manner. His purpose was certainly gained, for he attracted universal attention by his ruse."

In place of multiplying, as might be easily done, the examples of animal intelligence, it will be satisfactory to select such instances as evince emotional feeling on the part of brutes; and the more so, as the existence of the latter, when of a higher character than a mere passion, may be regarded as a proof of the existence of a correlative intellectual power.* It has been said that animals "seem destitute of sympathy with each other, indifferent to each other's sufferings or joys, and unmoved by the worst usage or acutest pangs of their fellows. Indeed, if we except some associated labours in the insect class, principally referring to the continuation of the species, and securing a supply of food, and some joint operations of the male and female in the higher classes, animals seem entirely incapable of concert or co-operation for a common end."† Such a statement is, however, much too general, and stands in need of considerable limitation. Not to mention those wild creatures which unite together to hunt down an animal that would speedily destroy any individual of them, there are undoubted instances of co-operation for mutual help under unusual circumstances, even amongst humble animals.

* By speaking of mere passion, it is intended to denote the low self-feelings, the lowest emotions—the Egoistic as distinguished from the Altruistic emotional life, as Comte would have it.

† 'Lectures on man.' Lawrence, p. 202.

A gentleman, seeing two stoats in the path, picks up a stone and, flinging it, knocks one of them over. The other uttered a loud and peculiar cry, which was answered by a number of its companions that rush upon the assailant, running up his body to get at the neck. He was compelled, after in vain fighting against them, to put his hands round his neck and to run away. He ran four miles, and when he arrived at his own stables, five stoats that had hung to his body were killed by the servants; others had dropped off as he ran. The common brown rats are capable of a wonderful combination, and when they do act in concert become formidable. They have been known to attack a cat, and to inflict such serious injuries, that the latter had to be killed. Dogs afford some remarkable instances of active sympathetic aid rendered to one another. A certain dog, in the eager pursuit of a rabbit, got fixed in a hole; two friendly dogs remained with it night and day, till by their exertions they had extricated it. A peaceable and not very brave dog, in passing a butcher's shop, was smartly punished by a terrier that rushed out of it; but it had a friend, a well-bred bull-terrier, to which it was observed to be particularly attached for some days after its misfortune, and when next it passed the butcher's shop it was accompanied by the terrier. The butcher's dog rushed out as before, but was received by the friendly terrier, and tumbled over and over amidst the joyful barks of its former victim.* Other such cases are on record; and a very interesting one is related by Mrs. S. C. Hall. "Neptune, a large Newfoundland, had a warm friendship for a very pretty retriever, Charger by name, who, in addition to very warm affections, possessed a very hot temper. In short, he was a decidedly quarrelsome dog, but Neptune overlooked his friend's faults, and bore his ill temper with the most dignified gravity, turning away his head and not seeming to hear his snarls or even feel his snaps. But all dogs were not equally charitable, and Charger had a long-standing quarrel with a huge bull-dog, I believe it was—for it was ugly and ferocious enough to have been a bull-dog—belonging to a butcher. It so chanced that Charger and the bull-dog met somewhere, and the result was that our beautiful retriever was brought home so fearfully mangled that it was a question whether it should not be shot at once; everything like recovery seemed impossible. But I really think Neptune saved his life. The trusty friend applied himself carefully to licking his wounds, hanging over him with such tenderness, and gazing at his master with such mute entreaty, that it was decided to leave the dogs together for that night. The devotion of the great dog knew no change; he suffered any of the people to dress his friend's wounds or feed him, but he growled if they attempted to remove him. Although after the

* A case precisely similar was communicated to the writer on the most reliable testimony.

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lapse of ten or twelve days he could limp to the sunny spots of the lawn, always attended by Neptune, it was quite three months before Charger was himself again; and his recovery was entirely attributed to Neptune, who ever after was called Doctor Neptune—a distinction which he received with his usual gravity." Now, Neptune himself was not a quarrelsome dog, but sedate, dignified, and peaceable; but as soon as Charger was fully recovered, the two set off together, furiously fell upon the bull-dog, and did not leave it till they had killed it. The anecdote evinces an amount of compassionate sympathy, of kindly and assiduous attention, a patient forbearance, and a co-operation in the execution of desperate punishment, which testify to an unexpected emotional sensibility, as well as to considerable reasoning power. Neptune was the good Samaritan in season; but he was also the determined executor of an avenging justice; and though his justice, like the primitive justice of mankind, was certainly a vengeance, it was still a vengeance called forth by a feeling of moral indignation on account of a friend's wrongs, and, at any rate, executed in complete abnegation of self. Another instance of active animal benevolence is given by M. de la Boussanelle, a captain of cavalry.* A horse in his company being very old, had worn its teeth quite away, so that it was no longer able to chew its hay or to crush its oats. For two months it was actually fed by the two horses that stood one on each side of it; they masticated the hay, and then placed it before the old infirm animal, and so likewise with the oats. He affirms that the entire company, officers and soldiers, witnessed the fact, and could testify to it. We have no name whereby to describe this kindly feeling and active sympathy amongst animals; for man has appropriated the honour thereof to himself, and calls it humanity—which is part of his system; for when he has done anything so abominably vicious and unnatural, that no brute ever did the like, he calls the act brutal.

That animals possess imagination is proved by the fact that they dream, which children seem not to do for a year or two after birth;† and that dogs as well as some birds of prey doubt, is made manifest when they will not pursue the game, sometimes because it is too far off, and at other times appear undecided whether to do so

* 'Observations Militaires,' Paris, 1860, quoted by Gratiolet, 'Anat. Comp. du Syst. Nerv., &c.,' p. 642. Gratiolet relates how two young bears were to be poisoned by throwing to them strong doses of arsenious acid in their food. To save the mother, she was shut up in a cage; the young ones, however, to console their mother, carried portions of the food to her. 'Des Hommes éminents, et, entres autres, M. de Blainville furent témoins du cette scène,' p. 642.

† According to Aristotle, children do not dream in earliest infancy—only do so when they are about four or five years old. In another part, however, he says that the new-born infant dreams, but only remembers its dreams later on in life. Burdach says, the child at the breast dreams, but forgets its dreams till about seven years old. Gratiolet, however, clearly recollects having dreamed when about three years old. (Gratiolet, op. cit., note, p. 497.)

or not. Other animals exhibit like hesitation and deliberation. "The mules of South America," says Humboldt, "when they feel themselves in danger stop, turning their heads to the right and to the left. The motions of their ears seem to indicate that they reflect on the decision they ought to take. Their resolution is slow, but always just, if it be free."*

Coleridge was accustomed to regard the dog as the most affectionate of animals, and he is said to have remarked that "the dog alone of all brute animals has a στόργη or affection *upwards* to man."† Though it is scarcely correct to say that it is the only animal which exhibits an affection upwards to man, as even the unwieldy hippopotamus becomes excessively fond of its sable attendant, there can be no question that the dog manifests such a feeling in a higher degree and in a more varied manner than any other creature. Marvellous and truly affecting examples testify to its intense love for its master; persistent neglect and continued ill treatment quench not the deep passion; and the brutal master's life has not unfrequently been saved by the faithful intelligence of his ill-used, and, one might almost say, humane, dog. It will guard carefully its master's property, dreading his reproach, and hoping for his approbation; it will avenge his insults and minister to his wants; it will die bravely in his defence, or pine away in slow grief over his grave. The sorrow and self-control, too, which outlast hunger in animal nature must be very great; and as dogs, left in some charge, and not duly relieved therefrom, have, from a sense of duty, dwindled down almost to skeletons, or have actually died rather than desert their posts, their moral restraint must not be lightly esteemed.

The phrenologists have, with their accustomed dogmatism, denied the sentiment of veneration to animals; but the creature of an inferior type of intelligence, evidently sometimes not merely fears but venerates the superior creature, and amongst those animals of the same class which choose an experienced chief and obey him, there is the clearest veneration for his superior wisdom. But if every other animal was left out of consideration, it would seem impossible to doubt the dog's veneration for man. As Burns has said, and as Bacon said before him, "Man is the god of the dog." Now the native Australian believes his deity to be inferior to the white man—regards it as vanquished, dethroned, and buried under the earth, existing even there only by sufferance. And as we do not question the existence of intelligence or of moral feeling in the native Australian, though he entertain such absurd notions, but rather discover the rudiments of both intelligence and moral feeling in him, it behoves us rightly to make all fair allowance in estimating the moral and intellectual faculties of the dog, which,

* 'Aspects of Nature.'
† 'Table Talk.'

however much inferior in type, are yet more truly and legitimately developed in its aspirations, than are those of the native Australian in the direction which they take. It is with the superior being, man, that it rests, what shall be vice to his dog and what virtue; he may teach it to refrain from taking that which it should not have, or he may teach it to steal with great cunning, and to look on success in such business with satisfaction. The master, in fact, makes the moral sense of his dog; and, just as the unhappy infant, born in an atmosphere of thieving, and nourished amid the unfavorable circumstances of a general immorality, grows up with a "moral sense," the good of which is evil, or rather with an "immoral sense," so the dog which has been subjected to the education of rascality inevitably works according to the system in which it has been developed, and worships the divinity that has presided over it.* There is a well-known story of a drover who used to steal sheep by the help of his dog. His plan was to indicate to it by some gesture the particular sheep which he wished to have, and then to send on the flock under the care of his dog, himself lagging behind. The clever animal contrived to mix the flocks, and, in the separation of them, to carry off the desired sheep. Of course, if the loss was discovered, it was put down as a mistake of the dog; but if not, the drover soon put his own mark on the sheep. Even the clever shoplifter does not sometimes disdain the assistance of a suitably trained dog, which in its thieving simply acts according to its light. On the other hand, Hogg, the "Ettrick Shepherd" tells how he has known a cur-dog to mount guard night and day over a dairy full of milk and cream, and never so much as touch the milk or permit a cat or rat to do so either. It is evident, then, that the conscience of the dog is mainly derived, though whether its existence presupposes the presence of an original moral germ implanted in the canine constitution, is a question that may well be left to the consideration of those philosophers who maintain, in the case of the human subject, that the development of moral idea presupposes necessarily the rudimentary existence of moral sentiment. The well-trained dog's conscience, so plainly rebuking it when it has sinned, surely no one can refuse to acknowledge. When the animal has, from some strong temptation, betrayed its master's confidence, how painfully conscious does it appear of its delinquency! With what a look of disgrace it shrinks away from the accusing eye—with a feeling seemingly compounded of fear, shame, grief, with a tinge of remorse, severally indicated in the timid shrinking,

* "Oh Lord! how I do love thieving: if I had thousands I would still be a thief," once exclaimed an unrepentant young female criminal, whose innate "moral sense" had unhappily taken flight somewhere. For evidence of the utter hopelessness of reforming many criminals, see reports of governors of gaols; for evidence of the cunning cleverness of these unreformable rogues, see reports of chaplains of gaols.

the conscience-stricken tail dropped between the legs, the sorrowful imploring countenance, and by-and-by the repentant, reconciliation-inviting wag of the reviving tail.

It would not be an easy task, it would be, perhaps, impossible, to prove that the primitive moral sense of which the dog is possessed, differs in anything but degree from that of mankind. Reflection upon the nature and origin of the moral sentiments seems to indicate that their existence depends upon the condition of mental development. They are moral cognitions, and the highest cognitions to which the mind can attain. Thus, for example, the highest moral feelings in man are feelings arising from certain abstract ideas—benevolence is the agreeable feeling springing from the idea of accomplishing the good of another, esteem is the pleasing emotion springing from the idea of the virtues of another, and so with other sentiments—they are all the correlatives of certain ideas which are evolved in the course of an advanced intellectual development. Now, it is evident that man only can be affected agreeably or painfully by abstract ideas, for the brute cannot receive them, and of course cannot feel them. Neither, however, it must be kept in mind, are the inferior human races able to receive any but simple ideas. The native Australian has no words in his language corresponding to justice, virtue or sin, and he is utterly incapable of receiving the abstract notions which these words excite in the cultivated European mind. An act of generosity or mercy would be almost, if not quite, as incomprehensible to this miserable savage as to a dog.* In like manner the early inhabitants of the earth had not any abstract language; when they thought of an act of justice, it was as some visible act performed by some deity. So that when we say that the moral feeling of the dog is confined to the concrete, and not to the concrete particular, but, inasmuch as it is capable of general ideas, to the concrete general, we only signalise a degree in its development a little lower than that which characterises the lowest human being. In fact, the moral cognitions are very imperfect, or altogether wanting, in early mental development, whether we trace it as it takes place in the animal kingdom, or in the child, or in those barbarians of the present day who represent the childhood of humanity. And what has been a little while ago said of the differences in the development of the brain among the different races of mankind, may be repeated of the differences in its function. The intellectual differences between the lower and the higher races, though less in degree than, are yet of the same order as, those which distinguish animal intelligence from the lowest human intelligence.

* Touching the moral sense in man, it may not be inappropriate to quote here what J. S. Mill says, when speaking of religious belief—"a case instructive in many ways, and not least so as forming a most striking instance of the fallibility of what is called the moral sense; for the *odium theologicum*, in a sincere bigot, is one of the most unequivocal cases of moral feeling."—('On Liberty.') J. Stewart Mill.

The examples which have been given of canine psychology appear to indicate the existence in dogs of the rudiments of emotional feeling of the higher order, which further observation may not prove to be so plainly displayed by animals that certainly seem to be superior to them in intelligence. In fact, the monkeys, though surpassing all the lower animals in intellectual powers, by no means equal the dogs in that sincere but rudimentary appreciation of moral relations which some of the latter exhibit. The higher animal seems, for the most part, to use its superior powers only for selfish and mischievous purposes; and there is all the difference between the cunning monkey and the well-trained, honest dog, that there is between the simplest, dullest peasant—kind, hearty, and sound to the core—and the clever educated thief, who is utterly incapable of realising moral truths, and uses his advantages only for the more successful gratification of his depraved passions.* Or more justly, perhaps, might the monkey's intelligence be compared to that displayed by certain demented or idiotic human beings, who, dead as it were to outward relations, are yet capable of very remarkable exercises of cunning in the gratification of self.

It is, incidentally, a reflection not a little striking, that the various mental characteristics of the different species of animals are sometimes manifested by different individuals amongst mankind; so that the fable of metempsychosis, which was Indian, Egyptian, and Grecian, may, to those who look beneath the surface of forms and words, appear to have a real signification. As in his bodily organization, so in his mental phenomena, man contains all that has gone before of the same kind. In some we have the gentle, patient, intelligent endurance of the elephant, in others the savage and cowardly cruelty of the tiger; some exhibit the stealthy, desperate, creeping cunning of the panther, and not a few are endowed with the obstinacy of the ass; one has the undemonstrative and generous courage attributed to the lion, while another may boast of the ignominious humility of the jackal, that waits upon the lordly beast. Some depraved mortals may manifest the characteristics of one of these animal types, and others those of another; but by far the most common form of human degeneration is that in which the animal propensities generally, in place of being subjugated to the control of a developed intellect and well-formed will, actually govern the intellect and will, and degrade them, as in the monkey, to their ignoble service. But this, though right seemingly for the monkey, is certainly not right for man; for while the evolution of the type of the

* If it be asked, whether the monkey is really, then, mentally higher than the dog, the reply is, that it is of a higher type, though of a lower development, than the domesticated dog. The effect upon the latter of human influence through generations has been not only to bring out all the possibilities of its type, but seemingly to impart to it some of the virtue of the human type; so that the number of its ideas is increased, and such ideas as it has are more acutely felt, as canine emotions testify.

former appears to consist in the development of reason within the circle of self, the just evolution of the human type undoubtedly consists in development out of self—in that realisation of the moral relations of the universe, which constitutes the highest intellectual and moral development.

The foregoing considerations lead us to remark that it is a mistaken waste of power to attempt by education to assimilate any animal to man; for the true education of every animal is to realise the possibility of its particular type—fully to display the teleiotic idea which it embodies. The difference of mental species is as important a fact as the difference of bodily species; and not till a way of compassing the transmutation of the latter has been discovered need there be any hope of transmuting the former. Accordingly, as might be expected, no amount of education during one generation has any effect in humanising the simian character; for although monkeys are gentle enough in youth, when, as we have seen, they are least removed from the human type, they almost invariably become mischievous, selfishly cruel, and utterly unmanageable as they grow up.* Though subjected to the most severe and steady training, the monkey cannot be prevented from stealing; however keenly alive to the grievous consequences of the act, it cannot resist it; steal it must, and steal it will, for its reason is the slave of its passion. Du Chaillu gives an interesting account of a young chimpanzee, which he caught and which he named "Joe"; and which acquired quite naturally, he says, two of the vices of civilization, stealing and drunkenness. It would enter his room in the morning, and, if he appeared to be asleep, would straightway make its way to the sugar-basin; if, however, he was awake, the cunning creature jumped on to his bed as though eager to be caressed. Sometimes Du Chaillu would feign to be asleep when it came in, and suddenly to wake up; Joe, if he had not already got as far as the sugar-basin, would jump on the bed seemingly overjoyed at its master's awakening; but if he was in the act of depradation, Joe made off at his utmost speed. He ultimately fell a victim to a bottle of brandy, which he had contrived to steal. It may be observed that what the dog must be taught with much care and patience to do well, the monkey artistically accomplishes quite naturally, and cannot be taught to refrain from doing. It cannot apparently acquire moral control. Whether by the influence of education through many generations, the character of the monkey might not be raised to a higher moral standard, is not so certain, and not likely, any way, to be decided.

Numerous examples might be given of the innate moral depravity

* As the physiognomy of the young chimpanzee is much more human than that of the full-grown animal, so the mental phenomena of the young are much nearer the human type than those of the full-grown chimpanzees; as the latter grow up, they develope into the specialities of the monkey type.

of the quadrumana, which in some amounts to downright moral insanity. Thus the mandrill—Papio maimon—is very easily excited to anger, and sometimes boils up into such a storm of fierce and vicious passion, that it has been known to fall down lifeless. It moreover, unlike most other monkeys, cherishes its rancour, and will maliciously pretend to have forgotten the offence in order to wreak its vengeance the better on a favorable occasion. In its passion it may be compared to the maniacal child, or to certain idiots, who, in paroxysms of violent anger, will sometimes fall down in actual convulsions. Again, a well-authenticated tale is told of a true baboon, which played various tricks for the pecuniary benefit of its master.* It used regularly to steal its own food; and the way in which on one occasion it got the better of a date-seller was admirably ingenious. Simulating a fit, it fell down as if in great pain, and rolled about the ground in apparent convulsions. But every writhing of its body brought it nearer and nearer the basket of dates, and when it came within reach of them, it emptied the basket with its hind feet, engaging the attention of the vendor meanwhile by its strange grimaces.

Another curious story, perhaps not quite so well authenticated, is told of the same animal. Its master had taught it to watch the cooking of his dinner while he was engaged in his occupation away from home. One day he put a fowl in the pot, and left it in charge of the baboon as usual. Curiosity overcoming the guardian, it took off the lid of the pot; the savoury odour which rushed out proved too much for its virtue; it tasted the fowl, took a little more and a little more, until it finally demolished the whole. Remorse thereupon followed; and a deadly fear fell upon the unfaithful servant. Something must be done to conceal the crime; and its ingenuity was sharpened by its fear. Rolling itself in the dust so as to cover nearly the whole body with a uniform coating thereof, it gathered itself into a heap with its hands and knees upon the ground, so as to present the appearance of a rough block of stone, with two pieces of raw meat on the top (the posterior red callosities). Some kites, attracted by the smell of the fowl, and seeing what they thought to be two pieces of raw meat, immediately pounced upon the fancied prize. A quick grasp, and one of them was caught, and, notwithstanding its struggles, forced into the boiling pot. The psychological character of the monkey is so well revealed in the story that it deserves to be true, whether it is so or not. One may add, that man is not the only being who is capable of using other animals for his amusement; for Humboldt tells of a Capucin monkey which was accustomed to catch a pig every morning, and, mounting on its back, to ride it for the rest of the day; even while the pig was feeding in the savannahs its rider kept its seat.

* Rev. J. G. Wood, op. cit.

The simiadæ exhibit in an extravagant manner all the inferior kinds of emotion, fear, jealousy, envy, hatred, malice, and all uncharitableness; but they do not seem to be capable of the higher emotions; although, in their exceeding cunning, they will, from an interested motive, at times feign a kindness and benevolence which they do not sincerely feel. A papion, whose wife had died, was the father of a little one that had been born in a menagerie. The young creature was unhealthy, stunted and rachitic; and it slept every night in the arms of its father, who gave it the greatest possible care. It was the object also of particular attention on the part of other monkeys, which not only forbore injuring it in any way, but caressed it in all sorts of ways. For this kind attention, however, those who observed the matter were quite certain that it was solely indebted to a lively dread of the long teeth and great strength of its parent. The manner in which a new arrival acquires its right of domicile in a cage of monkeys is singular. Almost all the old residents are inclined to quarrel with and persecute it, but they take good care, before doing so, to examine the length of its teeth, and to make themselves acquainted with its strength. The quarrelsome habit compels the keeper to have the little animals separate, unless some larger monkeys are willing to constitute themselves their protectors. Now, the cynocephali, though naturally cruel enough, happen to be rather fond of little ones, and, as they are of a changeable disposition, they prefer the new arrivals to those that have been with them for some time. Advantage is taken of this, and the monkeys that need protection are placed in the same sleeping cage with them; there is no fear then for the little ones.* It would not be wise to credit the cynocephali with much real kindness, this good habit of theirs notwithstanding; it may be that the explanation of the capricious and short-lived affection is to be found in the malicious delight which the big animal feels in disappointing the cruelty of the smaller bullies, and in the self-satisfaction which it derives from the exercise of its despotic power. Such motives for a capricious kindness are not altogether foreign to human nature.

Injustice must not, however, be done to the monkeys, lest in the present state of opinion the accusation be made of irreverence to our remote progenitors. The monkeys of the New World are generally of a gentler disposition than those of the Old World, and some even approach to amiability of character. Thus the Ateles is a gentle creature, and susceptible of a high degree of cultivation; it is not so capricious in temper as other monkeys, is affectionate, and attaches itself strongly to those whom it takes a fancy to.† It is a remark-

* Leuret, op. cit., pp. 536, 537.

† The Rev. J. G. Wood (op. cit.) gives a long account of a pet one.

A remarkable thing about the Ateles is, that its brain exhibits both the 'prémier pli de passage' and the 'deuxième pli de passage' of Gratiolet—the convolutions

able circumstance, that in all the countries in which the larger apes abound, stories are told of their carrying off women, and the inhabitants believe the tales; the large baboon, the gorilla, and the chimpanzee, are all said to have carried off women to the woods. In favour of the story there is certainly this to be said, that male baboons in captivity make a great distinction between their visitors, preferring much the ladies to the gentlemen. Sometimes they are so jealous as to fall into a great passion when any particular attention is paid to a lady in their sight. This propensity was made the means of recapturing one which had escaped from its cage in the Jardin des Plantes. Several unsuccessful attempts had been previously made, and some of the keepers severely wounded, when one of them hit upon a plan. There was a small window at the back of the animal's cage, and as the baboon passed backwards and forwards in front of the cage, the keeper brought a young lady to the window and pretended to kiss her. This was too much, and the animal bounced into its cage in a great rage, and was secured.*

It has sometimes been said, that man alone amongst animals is able to laugh from joy or to shed tears of sorrow. And it certainly would not be well to trust to the laugh of the so-called laughing hyæna, lest a like evil befal us to that which happened to a boy who put his fingers through the animal's cage; it snapped them off, swallowed them, and then continued its rollicking laugh. But in addition to the assertion of Le Cat, that he has seen the chimpanzee both laugh and weep, we possess the reliable evidence of Humboldt, who says of a small American monkey:—"Its physiognomy is that of a child; the same expression of innocence, the same arch smile, the same quick passage from joy to sadness. The Indians assert that this animal weeps like a man, and the observation is very correct. The large eyes of the monkey are moistened with tears the moment it exhibits great terror or lively distress."†

There is no less a resemblance between the early emotions of the infant and those of the monkey than there is between their physiognomies, inasmuch as the first emotions of the child are of the simplest kind and of the lowest order; sensational pain and pleasure pass in the most gradual way into the emotional grief and joy which spring from personal discomfort and personal gratification. After a little while, anger, jealousy, pride, envy, and other self-feelings display themselves; in

which come to the surface in the 'external perpendicular fissure,' and bridge over the chasm in man. The second convolution is invariably absent in both the authropoid apes, but invariably present in man; the first, Gratiolet says, is only found in man, the orang and the ateles. Dr. Rolleston has, however, shown that the first is not always apparent in men and the orang, and is sometimes present in the Chimpanzees. (See 'Nat. Hist. Review,' No. II, art. xx.)

* Op. cit., Leuret. The odd circumstance is, as some one has remarked, that the baboon should be able to distinguish the female when dressed.

† 'Aspects of Nature.'

fact, that constitutional impulse to maintain and develope existence, which has hitherto worked unconsciously in the organic processes, now having entered into consciousness, strives in a like manner to maintain individual comfort and increase individual power. Consequently every child must at first be, and is, eminently selfish; and it is only when the organic conscious impulses, as one might designate the lower emotions, are enlightened, controlled and properly directed by a rightly developing reason, that they receive their gratification in the indirect pleasure which the happiness of others and the realisation of moral relations bestow. Cruelty might seem to be innate in the child, but it is with it really as it is with the monkey, with the lowest barbarian, or with the cat as it tortures the mouse;* while there is a positive delight in witnessing the spectacle of struggling suffering, a consciousness of the pleasing affection of self by the object, there is not, by reason of the low state of mental development, any penetrating consciousness of the condition of the not-self; confined, as yet, within the domain of self, there is no realisation by the mind of the suffering actually inflicted. The ideas which correlate the feelings of compassion, sympathy, benevolence, and other such holy states of consciousness, have not yet been developed in the mind; and it is utterly impossible, therefore, that there should be any such feelings. By the fear of punishment children are taught to abstain from acts of cruelty long before they themselves feel the horror of such acts, just as the chimpanzee is taught to avoid the sugar-basin from the same cause; but just as the chimpanzee will steal sugar if it fancies that it can do so without being found out, and will exercise much ingenuity in preventing discovery, so, likewise, children, fearful of an open indulgence in acts of cruelty, will devise stratagems for compassing a secret indulgence—not yet feeling the acts to be inherently wicked, but dreading only the danger to themselves therefrom. Whether in such inflicted suffering is implanted in the child the first germ of the sense of obligation, which in time expands into a moral sense, whether, in fact, the conscience is first derived and afterwards becomes self-sustaining, as some philosophers maintain, or whether the development of moral ideas presupposes the rudimentary existence of moral sentiment, as others hold, are not questions to be entered upon here, where all that need be said is, that whatever conclusion be arrived at with regard to mankind, must be true in a lower degree of animals, must, in fact, be applicable to developing mind in nature as well as to developing mind in individual man.†

* It is so unlike animal nature to torture the prey before killing it, for the mere pleasure of witnessing its struggling agonies, that this habit of the cat is remarkable, and seems, indeed, to indicate man's hand in the matter. A good deal might be said in favour of its being an acquired instinct—a practice first taught by man, and afterwards transmitted as an instinct.

† The disputes upon these questions seem, in some degree, to be sustained by the fac-

Even if the practical difficulties in the way of the development, by human influence, of the chimpanzee's nature were not, as they are, insuperable, but really admitted of the attempt, there is every reason to believe that it would be impossible to expand the simian type into the evolution of those higher ideas which correlate the nobler emotions. The child, on the other hand, when well-born and healthy, passes through the natural course of a deepening and widening insight to the higher mental state, and therein leaves the highest qnadrumana immeasurably behind. While the destiny of man plainly is to bring himself, by development outwards, into the most intimate relations with nature—including in that term his fellow man—the monkey's nature is, and seemingly ever will be, to regard all nature solely with reference to its own personal gratification. The instinct of self-preservation, and the lowly passions which are the earliest manifestations of it in consciousness, dominate supreme in the simian nature. It is not altogether a flattering reflection for man, that he, with the perfect pattern of a divine manhood so long before his eyes, should yet be so very far from having arrived at his true relations with his fellow-man—should yet be loitering at so early a stage on the path of his destined progress.

The quick passion, the vices, the cruelties, and the other evidences of an uninformed moral sense which the young child discovers, are invariably observable also in the infantile mind of a barbarous people; and a most painful reflection, suggested by the contemplation of the great potentiality of the human type is the fearful degeneration, to which, from arrest or perversion of development, it is subject. Whenever an organism, or part of an organism with a high potentiality is arrested short of its proper development, it is less valuable, less capable of its function, less of a truth, if one might so speak, in the universe than an organism, or an organ thereof, which, though of a lower type, has arrived at its full development. This is true also of the development of mind; and something might, by the ingenious, be said in favour of placing the Roman Emperor, who made a consul of his horse, below the horse which he so ennobled. Though the undeveloped state of the human mind, as seen in the barbarians of the present day, and in the barbarous ancestors of now civilised nations, offers to our investigation emotion only of the simplest and lowest kind—little differing apparently in dignity from that of the lowest animals—yet we observe that, by reason of the higher type, it is perverted in a way which never happens amongst animals. The capability of great development is the capability of great degenera-

titious importance of certain words. Moral feeling, like every other state of consciousness, is necessarily a relation, the two elements of which are the individual and external nature. That the power comes solely from either element is evidently, then, a ridiculous supposition; but, as we know that, as a matter of fact, a rightly-developing individual does, and must, arrive at moral feeling, it is surely plain that he has the potentiality of it—call this moral germ, or what we will.

tion; and while the bee or the beetle makes no mistakes, man's history is a history of his errors. "Have not there been whole nations," says Locke, "and those of the most civilised people, amongst whom the exposing their children and leaving them in the fields to perish by want or wild beasts, has been the practice, as little condemned or scrupled as the begetting of them. . . . And are there not places, where, at a certain age, they kill or expose their parents without any remorse at all?"* There are numerous records testifying to like things being done at the present day. Dr. Krapf tells us† that "a woman of the Wanika tribe had given birth to two children, one of which had six fingers and no nose or lips. In conformity with custom, the parents took it to the chief, who strangled and burnt it, as a Rogo or misbirth." "Twins," says Major Burton,‡ "are usually sold or exposed in the jungle, as amongst the Ibos of West Africa; and if a child cuts the two upper incisors before the lower, it is either put to death or sold to the slave-merchant." Mr. Consul Petherick thus speaks:§—"I am informed by the Neam Nams, who seemed to glory in their reputation of cannibalism, that their aged, and, indeed, all when supposed to be at the point of death, were given up to be murdered and eaten." They always feast on their fallen enemies; and if a slave runs aways, he is, if caught, invariably killed and eaten. Du Chaillu again paints harrowing pictures of the cruel tortures which are inflicted by the tribes of Equatorial Africa, under the influence of their superstition; and superstition is but one mode of perversion of the human type, of such power in its evil workings as to destroy at times the strongest instincts in nature. Even the mother's love for her offspring is annihilated thereby. Cannibalism Du Chaillu found to be a common practice, the living of one tribe being in the habit of regularly eating the dead of another. And yet, in the midst of civilisation, sprout up more disgusting, more brutal and degrading exhibitions of vice than those which darken the reputation of the barbarian; insomuch that Nero, Caligula, Heliogabolus, and men of that stamp, whose names in modern times are legion, may actually blush if, in that abode set apart as a receptacle for perverted types, they meet the savage Australian, the benighted African, the miserable Andaman Islander, or the stunted Bosjesman. For after all there is a certain passionate simplicity in

* 'On the Human Understanding,' vol. i, p. 162. Bohn's Ed.

† Op. cit., p. 193.

‡ 'Lake Regions of Central Africa,' p. 116.

§ 'Travels in Egypt and Northern Africa.'

He found a curious custom prevailing near the Equator, where women are so scarce that there was not a girl above eighteen, who was not already married or betrothed. The marriageable girl is always sold to the highest bidder, and after much wrangling, an agreement is made as to how many days in the week the marriage shall hold good. If for four days, the wife is at liberty for the remaining three to enjoy a freedom from all matrimonial obligations.

the cruelty of barbarism, an animal impulsiveness in its vice, a child-like unconsciousness of the enormity, which make the crime fall far short of the refined vice and complex brutality of the higher development. Disgust at the pitiable spectacle sometimes presented by the latter must not, however, excite us to disown the superior type, and, moved by the morbid sentimentality which, after the fashion of Rousseau, lauds the comparative simplicity of barbarism, to exalt unduly the miserable savage; to do so would surely indicate as great a want of philosophical insight as it would do to praise the animal which cannot make a mistake above the human being who makes his thousands. The question of an individual's responsibility must be kept apart from the question of his position in the general plan of nature's development.

A careful and sober consideration of the very long way which the lower races of mankind are from that which seems the destined aim and goal of human progression, and a reflection on their fundamental constitutional inability to advance for any great distance on the path of progress, may reconcile us in some measure to the disappearance of barbarous nations from off the earth. While investigating the growth and development of mind, it is impossible not to feel a sort of satisfaction as we follow its degeneration amongst barbarians into extinction; for when the change, as in them, is not upwards, it must needs be a change downwards; and in place of observing the development, there is nothing for it but to watch decay—in place of tracing the γένεσις of mind, we must unhappily witness the φθορά thereof. What wonder that a sober gladness greets a death which terminates so painful a decay! Men do, indeed, pass upwards with feet red with the blood of their fellows; for the extinction of great nations, and the failure of countless individual lives seem to be necessary dispensations in the inevitable progress. Humanity does not, it is plain, any more than the individual, burst at once into its perfect efflorescence; and in the long process of development, extending through ages and ages, nations that have failed to advance or that have succeeded in going wrong, drop off and become extinct, as the dead passions drop away from the scarred trunk of a rightly developing individual character. As the tree struggles upwards towards light and air, branch after branch dying and dropping away, so that in time a stem is raised, and the leaf-crowned head exalted above the emanations of earth into the pure regions of a clear atmosphere; so man, mortifying passion after passion, and suffering them one after another to dry and drop away, raises the scarred stem of a strong character into a healthy moral atmosphere; and so, likewise, humanity, in its progress upwards, fashions the supporting stem only by sacrificing the early branches.*

* Two centuries ago, the Indians of North America numbered about 16,000,000 or 17,000,000 souls, without including those of Mexico. The present Indian popu-

The broad reflection which reconciles us to the disappearance from the earth of barbarous nations may in some degree mitigate the pain which is inflicted by the grievous spectacle of individual mental degeneration amongst civilised peoples. In the fierce and active struggle for existence, and for a development which is sometimes not the most just, the weakest are thrown down and fall into helpless madness; but even their fall is to the profit of the mass, and general advance is obtained at the cost of infinite individual suffering. As it is manifestly the aim of mental development to bring man into intimate and harmonious relation with the rest of nature by means of a patient investigation of physical laws, and, if possible, a living realisation of moral laws, it is no marvel, indeed it appears inevitable, that those who, either from inherited weakness, or from unfortunate circumstances, have been rendered unequal to the design of existence should be ruthlessly crushed out as discords in nature. For, as in the stupendous progression of the race, whole nations drop away like dead branches from the living tree, so amongst nations, individuals decay and fall down in crowds, as the dead leaves fall from the living branch. The observation which recognises in the fall of the leaf the evidence and result of the growth of the branch, may acknowledge, in insanity, mental growth throwing off decaying reason, and therein revealing its own life. That insanity is a comparatively rare affliction amongst barbarous nations may then be the result of their undeveloped state; and although it may probably become rare, or perhaps altogether disappear on the advent of a *true* civilisation, yet in the present condition of nations that are deemed to be advancing the frequency of its occurrence is scarcely a matter for wonder. When the relations are multiplied, the chances of disorder are increased, and where the struggle is hardest, and help is not at hand, more of the feeble must suffer.

From the general tenour of the foregoing observations with regard to the development of mind, it might be anticipated that in the degeneration of the highest intelligence there would appear to be a reversion to the lower form of human intelligence, or even sometimes to the type of animal mental development. It is necessary here, however, to distinguish between the idiocy which is produced by arrest of development and the insanity which has occurred in a full-grown brain, with a fairly developed mind; in the former case we do sometimes discover an approximation to the lower types, or rather to the general plan from which all the special types deviate, while in the latter we see only a higher type marred, pain-

lation is estimated by the Abbé Domenech ('Seven years' Residence in North America') at 2,000,000.

In the last report issued by the Colonial-office on the past and present state of our colonies, an account is given of fourteen persons, all adults, aborigines of Tasmania, who *are the sole surviving remnant of ten tribes.*

fully exhibiting its higher features in the character of its degradation. Malacarne professes to have counted the laminæ of the cerebellum, and to have found them to be less numerous in idiots than in men of intelligence. Now these laminæ are less numerous in the chimpanzee and in the orang than in man, and markedly fewer in other monkeys; so that there is, so far, an approximation by some idiots to the monkey type.* Again, a character in which the monkey's brain differs from that of man, is that the under surface of the anterior lobes in the monkey is excavated in consequence of the convexity of the orbital arches. Gratiolet has found this character well marked in a microcephalic idiot, aged seven, although when the smallness of the head is extreme, the smallnese of the frontal lobes renders the excavation less apparent. The simplicity and the symmetrical disposition of the convolutions, which also distinguish the brain of the quadrumana from that of man, are sometimes observed in small-headed idiots; they have been noted also in the brain of the Bosjeswoman and in that of the Hottentot Venus. In fact, as Dr. Rolleston observes, in the lower species of apes, and in the lower varieties of man, simplicity and uniformity are the rule, while in the higher species of apes, and in the higher varieties of the species, man, variability is the rule, and uniformity the exception. Though in the conformity by some idiots to the simian disposition of the convolutions, there may be an arrest of cerebral development at an animal stage, yet it would be by no means correct to suppose that in all cases of microcephalic idiots the atrophied hemispheres have the fœtal form. And, indeed, if the most recent observations on the development of the convolutions in the fœtal months, are to be trusted, we must acknowledge that even though the hemispheres have a fœtal character they must still differ greatly from the simian form. Gratiolet, after attentively comparing the brain of monkeys with that of men, has found that though in adult age the arrangement of the cerebral folds is the same, and that, therefore, if we were to stop here, there would be no sufficient ground for separating man from animals in general, yet "the study of development calls for an absolute distinction."† While the temporo-sphenoidal convolutions appear first in the brains of monkeys, and those of the frontal lobe afterwards, precisely the reverse takes place in man—the frontal convolutions appearing first, and the

* Gratiolet remarks that Malacarne must have examined congenital idiots; for the laminæ are less numerous in the fœtus than in the new-born infant, and less so in the latter than in the adult; they increase up to a certain age, and, therefore, if development be arrested, they will be less numerous. (Op. cit., p. 90.)

Paget mentions an idiot's brain, in which there was complete arrest of development at fifth month of fœtal life: there were no posterior lobes, and the cerebellum was only half covered. 'Lectures on Surgical Pathology,' p. 3.

† In a paper read before the 'Société d'Anthropologie' lately. It is evident that on this subject we may expect, ere long, some important information from Gratiolet, who has already done so much for cerebral anatomy.

temporo-sphenoidal afterwards; so that "no arrest in the progress of development could possibly render the human brain more like that of monkeys than it is at adult age; far from that, it would differ the more the less it was developed."

When we find, however, from observation, that a human being may, from an arrest of cerebral development, be destined to pass through life with a brain so imperfect as to be little better than that of some animal, we do not anticipate any higher manifestation of intelligence in him than is observed in the animal. But as a matter of fact, some idiots have brains that are fully formed, and to all appearance want nothing in development, and yet are much inferior to the brutes in intelligence. Some of them have no language whatever, cannot move, seem insensible to pain, are not able to take or chew their own food, are destitute even of the instincts of self-preservation and propagation, and much more of any sentiment of morality; they are capable only, in fact, of the organic functions, and seem to belong more to vegetable than to animal life, though they want even the struggle for existence which every vegetable has. In these cases it may well be remembered, as has been before said, that the functional development of the brain, as the organ by which man is brought into relation with external nature, only takes place very gradually after birth, and that it may, therefore, be quite possible that some unfortunate cause may produce an arrest of development immediately after birth as well as a few months before that event. As it is universally acknowledged that there is a great difference between the nervous force of different people, independently of any difference in size of the nervous mass, it is readily conceivable that the completely formed brain may lack force—may be deficient in, or almost destitute of, that nervous energy by which it is rendered capable of responding to the force around it. The organic constructive force which at times performs such strange freaks in the womb—as for instance, when it forms well the whole of the fœtal organism with the exception of the brain, seemingly forgetting that organ, or more likely not having the energy necessary to produce it—may well be supposed to exhaust itself sometimes in the development of the nervous substance, and to have no force left for the endowment of it with the nervous power essential to its developmental progress in the new and trying relations of its life in the "womb of time." "It is not sufficient," as Dr. Buchez remarks, "that man be engendered carnally in order to be perfect; he must be engendered spiritually also."

From the vegetative idiocy we might pass through every degree of lessening imbecility up to ordinary human intelligence, and trace a progress very like that which has already been displayed in the development of animal intelligence. In such an occupation, it would be remarkable how plainly at times there crop out in the degenerate type of mankind traces of the animal. Pinel published

the case of an idiot, who was something like a sheep, both in respect to her tastes, her mode of life, and the form of her head. "She had an aversion to meat, but ate fruit and vegetables greedily, and drank nothing but water. Her demonstrations of sensibility, joy or trouble were confined to the repetition of the ill-articulated words 'be, ma, bah;' she alternately bent and raised her head and rubbed herself against the belly of the girl who attended her; if she wanted to resist or express her discontent, she tried to butt with the crown of her head; she was very passionate. Her back, her loins and shoulders were covered with flexible and blackish hairs, one or two inches long. She never could be made to sit on a chair or bench, even when at meals—as soon as she was placed in a sitting posture, she glided on the floor; she slept on the floor in the posture of animals."* "One of our pupils," says Dr. Howe, "besides all the marks just mentioned, which give him a strong likeness to the monkey, has, moreover, the long arms of the ape; he moves about with his head and shoulders stooping, and his arms hanging forward, as though he were going to drop on all fours. One of his pleasures is to climb upon a desk or high place, and leap through the air with outstretched limbs upon some one's neck and to cling round him, not as a common child does with his arms alone, but twining his legs about him, as though he were one of the quadrumana."† An idiot sometimes ruminates like a cow, bringing up his food and masticating it a second time; another howls when he is hungry, does not eat, but swallows his food, and licks up the crumbs like a dog; when he wishes to recognise any one he begins by smelling at him, as, according to Humboldt, the Peruvian Indians distinguish in the night the different races by their quick sense of smell.

A curious instance of the manifestation, or, as some would say, of the resurrection of an animal instinct, was afforded by an idiot woman who was great with child by some miscreant; as no assistance was at hand at the time of her delivery, she gnawed through the umbilical cord as the beasts do. Major Burton tells us that among the East Africans the child is carried on the back, a sheet or skin being passed round it, and that "even in infancy it clings like a young simiad." The native Australian female, who is perhaps the lowest of womankind, carries her child similarly suspended, and throws her elongated pendulous breasts over her shoulder for it to suck, and, kangaroo-like, perhaps to hold by.‡

* Esquirol, 'Des Maladies Mentales.'

† 'Report on the Causes of Idiotcy.'

‡ The inferior races, in other points of structure besides that of their brains, exhibit approaches towards the monkey type. In the chimpanzee the parietal and sphenoidal bones are prevented from coming in contact by an intervening projection of the temporal bone. Many negro skulls have been observed by Owen to have the same conformation, whereas in the Caucasian, the sphenoidal and parietal bones are in contact for about half an inch. Again, the middle turbinate bones in negroes form large globular protuberances in the nose, whereby the surface of the olfactory membrane is much increased, and the African, like the brute, has an acute smell. In the ape the

In the degeneration which takes place if a higher race of men be badly fed, badly clothed and housed for a generation or two, there is, according to some, an undoubted approximation to the monkey type of figure. Whether this be so or not, there can be no doubt that when men are well fed, and well clothed, and their intellects systematically cultivated, their looks become more lofty and noble, and they pass farther and farther away from the monkey type. The true development of conscious mind and the degradation of it, are both alike faithfully reflected in the action of the unconscious organic force. About 200 years ago a number of people were driven by a barbarous policy from the counties of Antrim and Down in Ireland towards the sea-coast, where they have ever since been settled, but in most miserable circumstances, even for Irishmen. The consequence has been that their features are repulsive, their jaws project, their mouths are large, their noses depressed, their cheek-bones high, their legs bowed, and their stature extremely diminutive. "These, with an abnormal slenderness of the limbs, are the outward marks of a low and barbarous condition all over the world; it is particularly seen in the Australian aborigines."* Again, the Cagots were a class of men found scattered along the coast of France from the north to the south; they were sunk in the deepest poverty and abasement, and treated with the greatest contempt and abuse. In the eleventh century they were bequeathed and sold as slaves, and although just admitted to be human beings they were compelled to enter a church, being reputed leprous, through a small door specially made for them, to have special seats and a special holy-water font.† This utter moral and intellectual abasement was truly reflected in the miserable physical degradation which threatened almost to bridge over the chasm between man and the animals. Happily for mortals, however remarkable may be the animal characteristics of their extreme degradation, nature seems to have made sure provision for the speedy extinction of the degenerate results; for she puts the ban of sterility on the morbid type, and thus, in place of reverting to an animal type which might be fertile, plainly manifests the design of extinguishing human degeneration.‡

bicuspids are planted with three fangs; in the Caucasian there is but one fang, which is, however, formed by two being united; in the negroes, the two fangs are distinct. Concerning other interesting points in this approximation, reference may be made to White ('On the Regular Gradation') from whom Lawrence ('Lectures on Man') has profited. White was, however, clearly far too eager to approximate man to the monkey; for he distinctly asserted that "the orang-outang has the person, the manner, and the actions of man"—in such opinion being confirmed by Lord Monboddo, who maintained that "the orang-outangs are proved to be of our species by marks of humanity that are incontestible."

* 'Vestiges of Creation.'

† Esquirol, op. cit.

‡ This consideration may be regarded as militating against the supposition of any descent by man from the monkeys. For if by the operation of favorable external conditions, man has been brought to his present level, why should he not, by the operation of unfavorable conditions, go back to the monkey's level?

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As idiocy, when not congenital, is an arrest in the functional development of the brain at an early period, and as we have already seen that the intelligence of early infancy differs from that of the animals, not in what it actually is, but in what it potentially may be, it is evident that an early arrest in the development of human intelligence may correspond somewhat closely to the complete development of an animal's intelligence. Accordingly some idiots are like certain humble animals, while many more—the great majority of them—psychologically resemble the monkeys. And this monkey-like character of idiotic intelligence will not seem altogether unaccountable, if we remember that one cause of idiocy in a human brain rightly developed at birth, has been supposed to be a want of nervous force; the want, in fact, of that higher potentiality whereby, under suitable conditions, it expands into its special functions, such force as may be available in this deficiency carrying the functional development no higher than the monkey's level. It is the custom of idiots to use such powers of intellect as they have for the gratification of their passions, and to that purpose they will at times display intelligence of which they would not have been supposed capable—will even, now and then, make advantageous use of their simplicity in order the better to deceive. Their reason, monkey-like, works entirely within the circle of self, and the defective mind cannot rise to the height of those higher emotions which are the expressions of a conception of moral relations. The abnormal state of a superior organ brings it to the level of the normal state of a corresponding inferior organ. Charlot, "un simple d'esprit," amongst other occupations, is crossbearer at the funerals at the Asylum, and receives on each occasion an allowance of tobacco for his work. Well, when he hears the passing bell he dances with delight; if he knows that some one is dying he roams about restlessly, impatiently counting the minutes of the sufferer's agony; and if he can manage to slip unobserved to the bedside, he will reproach him bitterly for not dying fast enough."* Charlot was plainly rather a superior idiot, but he may still be regarded as a type of that low order of intelligence which concerns itself solely with the modifications of self; for although it is true that all intelligence first arises in such modification, yet it attains development only by attention to the causes thereof; that is, by the investigation of the relations of the not-self. Sensation is at first pure self-consciousness, but perception advances out of it in the development of world-consciousness; and, in like manner, in a higher sphere the lowest intelligence is occupied with the subjective affection, while the higher intelligence labours to bring the individual into the closest possible relations with the objective,

An examination of the stories told of wild men, as of Peter the Wild Boy, and of the young savage of Aveyron, proves that they were cases of defective organization—really, therefore, 'pathological specimens,' as Lawrence observes.

* Morel, 'Etudes Cliniques sur les Maladies Mentales.'

and, by a wide insight into his fellowship therewith, to subordinate the misleading self-feelings to those higher feelings which spring from the recognition of himself as a part of nature, fulfilling the end and purpose of existence in advancing the general good. As in the early perception there is the revelation of a self and a not-self, so in an early stage of a truly developing intelligence there is the revelation of a moral self and of moral relations.

In the painful and humiliating spectacle of human degeneration which is witnessed in the breaking down into madness of a mind seemingly well-developed, there is no such approach to the animal type as is occasionally exhibited by congenital idiots. The mighty are pulled down, but the might is manifest even in the wreck. And as the ruins of imperial Rome are more solemn, mournful, awe-inspiring, than those of the Indian wigwam village, or as the bare branches of the dying oak, outstretched as in bald rugged agony and mute reproachful entreaty towards heaven, are more deeply impressive than the dropping petals and fading leaves of the rose-tree, for which it seems only natural to die; so the spectacle of the man of great intelligence falling down mad in the joyous activity of busy life is infinitely more sorrowful than that offered by the congenital idiot, or, perhaps, even that presented by the decaying nation of barbarians. But, as has been before said, the capability of development is the capability of degeneration, and the superiority of type is proclaimed in the extent and variety of perversion to which it is subject. As the human body, by virtue of its great specialization of parts and delicacy of organization, is more liable to disease and subject to many more diseases than the animal body, so likewise the human mind, being so far exalted in its just development above the animal mind, is, by reason thereof, subject to the possibility of a much greater degradation. Even the madness of man, then, declares his superiority. But such is the benevolent purpose of nature that no efforts whatsoever can perpetuate a morbid human type; for although the offspring of degenerate parents is a further degeneration, the evil soon corrects itself; and, long before man has descended to the animal level, there comes an incapability of producing offspring, and the morbid type dies out. Insanity, of what form soever, whether mania, melancholia, moral insanity, or dementia, is but a step in the descent towards sterile idiocy, as may be experimentally proved by the union of mentally unsound individuals for a generation or two. Morel relates the history of one family, which may be shortly summed up thus:

First generation.—Immorality. Alcoholic excess. Moral brutishness.

Second generation.—Hereditary drunkenness. Maniacal attacks. General paralysis.

Third generation.—Sobriety. Hypochondria. Lypemania. Systematic delirium. Homicidal tendencies.

Fourth generation.—Feeble intelligence. Stupidity. First attack of mania at sixteen. Transition to complete idiocy; and probable extinction of the race.*

Not only, however, does idiocy die out, but—additional blessing—it dies out soon. According to the best estimate that could be made by the American commissioners, the average duration of life amongst congenital idiots is not more than twelve years. And Dr. Howe adds:—"Idiots of the lowest class perish in great numbers in infancy and childhood; fools last longer, and simpletons attain to nearly the ordinary longevity. Perhaps it is safe to say, that the ordinary longevity of the lowest class of idiots is not more than six years."†

It is almost impossible to avoid expressing a grateful admiration of the wise, sure, and merciful provision of nature by which degenerate mind is so quickly blotted out. The complete absence in some idiots of the instinct which is so powerful in all animals, the instinct of propagation, and its futility when present in others, are certainly facts of deep significance in the economy of nature. Though the instinct impels the lower animals blindly to the accomplishment of acts necessary for the continuation of the species, its sphere of action is not limited by so lowly a function in man. As a mere animal impulse, prompting the continuation of the kind, it still moves the individual to that which shall result in the propagation, at any rate of his influence, and in part also of his individuality, through time. We find, however, that instincts, which work only unconsciously in the lower animals, enter into consciousness in man, and, thus illuminated, manifestly acquire a nobler development and a larger circle of action. The self-conservative impulse becomes in consciousness that self-feeling which lies at the bottom of all our emotions and, indeed, of conscious individuality; and, in like manner, the propagative impulse, in consciousness, not only makes the individual acquainted with its sexual design, but prompts the highest intellectual action for the continuation of his influence through time. It is by its power that man consciously labours for the future, that day after day, even when sinking into the grave, he irresistibly believes in a future, that he lays up stores which his

* Op. cit.; also, 'Traité des Dégénerescences physiques intellectuelles et morales de l'espèce humaine, et des causes qui produisent ces variétés maladives.' Catherine de Médicis amused herself with making marriages between dwarfs; they were always sterile. Giants are commonly impotent, and both giants and dwarfs ordinarily die early, according to J. G. St. Hilaire. 'Hist. des Anom. de l'Org.'

The French psychologists, who have just reported on Gheel, state, as I am informed by Dr. Bucknill, that in all the pregnancies of lunatics there the male parent has always been sane.

† 'Report on the Causes of Idiotcy.'

The various monsters that are formed by the greater or less union of two fœtuses generally die soon after birth, even when no cause is apparent why they should do so. Nature clearly does away with them to preserve the genuine figure of human frames.

reason assures him he will never himself enjoy; that he aspires to leave a name in the world's history; it forces even the most selfish, to some extent, out of the small circle of individual selfishness, even if it be only into the little larger circle of family selfishness; and it seemingly lies at the foundation of that instinctive belief in immortality which some uphold, that every nation, however barbarous, more or less distinctly has. Some might wish to describe it as but a particular manifestation of the self-conservative instinct; and such a description would be just enough in the philosophy which regards the best moral action as, what in the long run it surely is, the highest selfishness. Man, must, however, plainly first gain the force, be selfish in acquiring, before he can use it, become moral in applying. And, regarding the purpose of the propagative instinct, and its late effective appearance in individual development, we appear necessitated to conclude that its aim, when fully developed in consciousness, is rather to control the feeling of self, and to expand the power of self in a wider diffusion. It may be described as the impulse of mind to continue and develope in nature, active and energetic while man is advancing, but contracting more and more the circle of its action as he degenerates, until it is reduced to its primitive condition of a mere animal impulse for propagation, which in mankind is the idiotic stage immediately preceding its final extinction.

The physical degeneration of a sexual impotency is surely reflected in a corresponding moral degradation. It plainly is not the purpose of nature to extinguish the animal in man, but rather to exalt it, to ennoble it and develope it in the moral and intellectual; insomuch that, whenever by nature or art, man is deprived of the power of propagation, he becomes a degenerate being, whose career ends in desperate vice, or in madness, or in suicide. The perfect moral man must be of perfect physical development. Eunuchs are said to be the vilest creatures of the human race, cowards, deceitful, envious, and vicious. "Castrated persons have many defects which are peculiar to them; they have a bad odour, a yellow colour, furrowed cheeks, and feminine voice; they are unsociable, deceitful, and rascally, and are never known to practise any human virtue."* Black eunuchs, according to J. S. Beauvoisins, are brutal animals, and live like wild boars in their lairs. "These ferocious animals seem to think that they may do what they please, and are ready to sabre those who do not get out of their way."† Even those who, in civi-

* 'Cours d'Opérations,' par Dionis.

† "On sait que les eunuques sont, en général, la classe la plus vile de l'espèce humaine; lâches et fourbes, parcequ'ils sont faibles; envieux et méchants, parcequ'ils sont malheureux."—'Rapports du Physique et du Morale de l'Homme,' p. 322, by P. J. G. Cabanis,

It may be said that there have been instances of eunuchs, as during the decline of the Roman Empire, who have been remarkable for great intellectual power; but the objection does not much affect the opinion with regard to the propagative in-

lised life, though not wanting power, are yet prevented by the unfortunate circumstances of an artificial mode of living from the natural and complete development of the procreative instinct, in the happy feelings of affection and the unselfish activity which flow from the results of its legitimate exercise, fall oftentimes into an unhealthy state of mind; and it might be soberly argued that much vice, crime, and madness, are attributable to that cause. Nevertheless, when such unhappy consequences follow, though in some measure a reproach, it must not be deemed an unmitigated reproach to civilisation; for they clearly happen, not because there is no refuge from an apparent evil, but because, from ignorance or a self-indulgent indolence or a constitutional weakness, the right remedy is not used, because the ever-prompting instinct is not consciously directed in the moral and intellectual sphere to some aim of general usefulness, which might afford a vicarious satisfaction to its blind longing.

As, notwithstanding the painful sufferings and trials which experience proves to him make up the most of his life, man clings closely to existence by reason of the powerful instinct of self-preservation, so he is impelled by the instinct of propagation to continue his kind, notwithstanding the miseries which he well knows must ever befall it, and to labour patiently for the future, notwithstanding the knowledge of so much profitless labour, and so little real advance, through the many ages of the past. But, happily, there is some gleam of encouragement; for, however slow the progress, all observation proves that mankind is advancing. The beings of the present civilisation are evidently superior to those of any past civilisation, and the beings who now make barbarism appear to be disappearing from the earth.' The researches of modern science have, too, established sufficient grounds for the assumption that man coexisted with the animals found in the diluvium, and that many a barbarous race may have disappeared, before historical time, with the animals of the ancient world, "whilst the races whose organization is improved have continued the genus."* The various fragments of human crania, with the circumstances under which they were found, and especially the discovery of his works—as the flint implements are supposed to be—certainly supply strong arguments for maintaining the geological antiquity of man. The Neanderthal fragment of cranium and the skulls found in several parts of Germany, with the extrordinary prominence of their superciliary ridges

stinct; for (1) it is the moral development that is most affected by the physical degradation from which eunuchs suffer; and (2) it is known that eunuchs sometimes have the instinct, and vainly attempt what they have not the power to perform.

* See Prof. Schaafhausen on the 'Crania of the most Ancient Races of Man,' in Art. xvii, No. 2. 'Natural History Review,' from 'Müller's Archives,' 1858.

and their exceeding narrow and low foreheads, approach nearer to the monkey type than the crania of the lowest surviving human race.* And the conclusions which the Abbé Frere drew from his large collection of crania were, that the capacity of the skull had increased in modern times, and that while in the most ancient races the occipital was the most, and the frontal region the least developed, "the increase in the elevation of the latter marked the transition from barbarous to civilised man."† So that, although we have not the positive evidence of the brain itself, we have sufficiently strong evidence, in the character of the cranium, that the races of primeval times were inferior even to the lowest existing race; and the records of the past, as well as the observations of the present, fairly entitle us to uphold a gentle progression in the physical development of mankind.

An important consideration presents itself as to the way in which the material improvement functionally expresses itself. Can we truly recognise a general growth of mind, a widening of the thoughts of men, through the ages? That the cerebral development has plainly declared itself in intellectual progress, will scarcely admit of question. The general store of knowledge is increased upon the earth, and each individual is much wiser than his remote progenitor. And yet, with great intellectual development, there has been something wanting; for, although there have been many nations that have attained to great knowledge, yet they have one after another gone the way of destruction—mind has advanced to a lofty height only to suffer a greater fall. It needs not any deep scrutiny of the histories of the departed nations to show that they lacked one thing, and that, a faithful and practical recognition of the moral laws of the universe. A learned writer of the present day, who has travelled over nearly all the world—over whose head the great Niagara has dashed, who has "spent months amongst the Trappers in the bush;" who has "smoked the pipe of peace with the Austral savages in the prairies, and with the polished Arabs on the plains of Palestine;" who has "fought with the savages, and discoursed with the high priest of Mecca;" who has "seen tempests on the Pacific, and tornados on the plain;" who has done battle with the tiger and the wild boar, and could show scars that he has not escaped

* Prof. Busk observes of these skulls, that they do not belong to the brachycephalic type, and cannot, therefore, be referred to the short-headed race or races which, there is much reason to believe, constituted the earliest of the existing European stocks.'

† Quoted in 'Nat. Hist. Review.'

Dr. Pritchard's comparison of the skulls of the same nation at different times in its history led him to the conclusion that the present inhabitants of Britain, "either as the result of many ages of greater intellectual cultivation, or from some other cause, have, as I am persuaded, much more capacious brain-cases than their forefathers." ('Physical History of Mankind,' vol. i, p. 305.)

scathless," states briefly the results of his inquiries and observations thus: "In every part of the globe I found the "many" degraded and miserable; and the "few" miserable and luxurious. On the one hand ignorance and servility; on the other, cunning, rapacity, and power." True of the present, this is yet more true of the past; and the ghost of many a departed nation might well utter to the nation of to-day the solemn warning of the fallen Wolsey:

Mark but my fall, and that that ruined me.

Of small avail was the mystical knowledge of the Brahmin, who has made, perhaps, greater efforts than any other mortal to comprehend the incomprehensible, when it revealed not to him that the Sudras was of equal dignity with himself in creation. Little good was there in the wonderful science of the Egyptians, which disdained not to build such gigantic follies as the pyramids by the compulsory labour, and at the cost of the lives, of thousands upon thousands of slaves. Grecian intellect still works notably in the present day; but neither Grecian intellect nor Grecian art could save Greece from decay. Those who poisoned Socrates, when through him wisdom raised her voice in the streets of Athens, were plainly not going the wise way to life, but the foolish way to death.

The Roman Empire, so great in the false greatness of military glory, was some 1250 years from the time of Romulus in growing and in dying; but it has long since gone. In the year 476 or 479 after Christ, the last emperor, Romulus Augustus, contemptibly called Augustulus, disappeared, and Odoacer, a barbarian, reigned over Rome. The senate then, in their own and the people's name, consented that the seat of the empire, which had ignorantly devoted its power to destruction, should be transferred from Rome to Constantinople, where, in the fullness of time, the Saracens gave an account of it. Constantine Paleologus there bravely met the Turks in the breach, and perished amidst the ruins of a dynasty and empire, which he was unable to save. His self-immolation availed nothing, and for 400 years the crescent has been planted on the cathedral of St. Sophia. That which now constitutes the greatness of Britain, at one time constituted the greatness of Tyre, whose "proud piers lie scattered in the main"; and though the piers of England may yet be sound, and her wooden walls untainted by decay, it may be well, before making an example of England, to remember that the battle of Hastings was only fought some 800 years ago, and that 800 years is not a long period in the history of a nation, and is a very short period in the history of the world.

It may be that the nation, like the individual, has a term assigned by nature to its existence, and that, how carefully attentive soever it may be to the physical and moral laws, it must still after a time decay and die. It is plain, however, that the experiment has never yet been fairly made; for though there have been in most nations certain

wise and virtuous men, who have sincerely acknowledged and faithfully proclaimed the vital importance of obedience to the moral laws of nature, and have often died sacrifices to their convictions; yet the mass has ever been, as the deaths of the prophets prove, ignorant, savage, and degraded. And of what avail is the progress of the individual if the whole nation remains hopelessly behind? It is true that we, looking back from our vantage ground on history, may be able to assign the individual his due position in the plan of the development of mind—may be able to trace the progress of mind through him in a stagnant nation, as on the surface of still water we recognise the motion of the undulation when the water itself makes no progress. Nevertheless, it is a deeply gloomy and unsatisfactory supposition that this must ever be the method of progress; and when we reflect that moral principles are not merely intellectual speculations, but actual laws of nature, as certain and uniform in their operations as are the physical laws, there is every reason to anticipate that as the recognition of the physical laws has added so greatly to the power and comfort of mankind, so the practical realisation of the moral laws in the conduct of life will increase the happiness, advance the mental development, and, perhaps, insure the stability of nations.*

That which appears to have been so fatally wanting amongst the nations that have passed away, is none the less a fatal want in the individual who lacks it. To say the best of him who has failed intellectually and morally to develope, or who has degenerated, is to say that the world is no better by his existence. He has eaten, has drunk, has slept, has propagated, and died; and if any advance is to come out of him, it is left for his posterity to make under the inherited difficulties of his deficiencies. The natural course of a just

* It is not always easy to understand what ideas some philosophers wish us to have with respect to the relation of the physical and moral laws in the universe. Dr. Whewell, whose writings it would be almost presumption to praise here, says that physical laws are laws according to which things *are* and *events* occur; but moral laws are laws according to which actions *ought* to be. And are not physical laws really laws according to which men *ought* to act, if they wish to act successfully? A man may break his neck easily if he chooses to ignore the existence of a law of gravitation, and so such or a like event may *be*. And similarly, also, by ignoring the existence of moral law an individual comes to a certain punishment; and pain, disease, suffering, remorse, in himself and in his posterity, *are* events flowing from the infraction of moral law. The greater influence of the human will in determining events under the moral laws than under the physical laws does not establish any essential distinction, in the mode of action of the former, in nature; for the human will, however free it may be called in its own sphere, is clearly contained in the wider sphere of nature, and acts according to laws which are derivative from the more general laws of nature. It appears, indeed, that the physical and moral laws are so correlated, that the action of one plainly revenges the infraction of the other. When, therefore, Dr. Whewell speaks of the attainment of a knowledge of nature as the '*Idealisation of facts*,' and uses the '*realisation of moral Ideas*' to express the constant progress of humanity, we are prone to attribute the seemingly untenable distinction to that bias which leads him to underrate, and so painfully to fail in doing justice to, Locke.

mental evolution is to fashion, in the highest moral sphere, a powerful will out of that fundamental reaction which we trace upwards in organic action, in reflex action, in consensual action, and in emotional impulse. And if it be said, that every one will in the end, philosophy notwithstanding, act according to the dominant feeling, or, in other words, according to the strongest motive, the reply is that the nature of the dominant feeling will be determined by the condition of intellectual development. That which in one of little knowledge or limited perception produces a pleasurable feeling, and is provocative of a certain action, will in another, who discerns the moral relations of it, produce a painful feeling, and excite quite a different action; and, again, objects which in an undeveloped mental state are painful, may in the developed mind, alive to all their relations, produce pleasure, and action in accordance with such dominant feeling. It is plain, then, that men shonld rightly be able to give a reason for the faith that is in them, even for the faith in their feelings; and it is quite as necessary for proper mental action that there should be a co-ordination of the emotions, as it is that there should be a co-ordination of the movements of muscles for proper physical action. Insanity is often plainly traceable as the natural termination of mental action that is not upwards; and like as individuals suffering from certain bodily disease, as chorea, are unable to control the incoherent muscles to a desired aim, and have been said to suffer from muscular insanity; so certain of the insane are afflicted, from want of will force, with an inability to co-ordinate their feelings, and might be said to suffer from convulsed and incoherent feelings. Besides acquiring a knowledge of the physical laws and power thereby over external nature, it is evidently necessary that man should obtain a knowledge of the laws of mental development and power over his own nature. Any individual development which is not in that direction, however fashionable it may be, is as false as that of the departed nation, and will not conduct to those high mental conceptions which correlate the sincere and vivid convictions of the highest moral feeling.

It may be said by those who are sceptical with regard to human progress—and it is sometimes said in the way of scornful reproach—that the principles of morality have been the same from the beginning of the world, and as well known to mankind through all its history as they are at the present day.* There has ever been a wise

* Buckle's 'History of Civilisation.'

"La morale de toutes les nations a été la même." (Condorcet.)

"In der Morale-philosophie sind wir nicht weiter gekommen, als die Alten." (Kant.)

"Morality admits no discoveries. . . . More than 3000 years have elapsed since the composition of the Pentateuch; and let any man, if he is able, say in what important respect the rule of life has varied since that period. Let the institutes of science be explored with the same view—we shall arrive at the same conclusion. Let the books of false religion be opened;—it will be found that their moral system is, in all its grand features, the same," &c. (Sir J. Mackintosh.)

and virtuous minority, which has always been swallowed up in the foolish and wicked majority. Meanwhile, it may be said, as men are thus coming and going, nature's changes go steadily on. The mountains are day by day disintegrated; the peak we see "shedding its flakes of granite on all its sides, as a fading rose lets fall its leaves;" and everything seems to indicate that a gradual and destructive change is taking place, which must sometime render the earth unfit to be the dwelling-place of man. Have we any reason, then, to believe that the good will overtake the evil before the end comes? What evidence is there that man will not be swept away as an animal incapable of advance beyond the narrow limits of his present development; while the lives and works of the virtuous minority, and the achievements of science, remain only to mark his aspirations, as certain rudimentary organs in some animals indicate their efforts after a higher organization, and are prophetic of a higher species? When the "everlasting hills" are decaying, and the fountains of the solid earth are unsure, is it not possible that the race of man may be swept away, and the wreck thereof remain to mark a geological stratum, and to build the foundation of a millennium of higher beings? Nevertheless there are some reasons why we should reject such a sorrowful and scornful philosophy.

Our investigation of the development of mind has shown that the natural course thereof is to bring the individual to those conceptions of his relations in nature which, viewed on the intellectual side, are the highest generalisations concerning the physical phenomena of nature, and which, on the moral side, are truly cognitions of the moral course of nature. Man has relations to the universe of matter, which he labours to discover, and since Bacon's time has been successfully discovering; but he has relations also to the universe of souls, which he must likewise labour to discover. Moral cognition is, then, an end to be attained in the natural course of a truly advancing mental development. And if the human race is not doomed to degenerate and perish, but is destined to develope and abide, it is to be presumed that not a favoured few only, but the whole race, must necessarily develope into the high state of moral cognition. It behoves us not to be impatient, because the result seems still so far distant, but rather, calmly reflecting that "centuries are but seconds in the great process of the development of advancing humanity," patiently to hope for this realisation of our moral ideal.*

We are not without evidence that the race is progressing in moral improvement. Looking at the facts as they are, it seems impossible

* "In what condition do I leave the world," writes Humboldt in 1853, "I who remember 1789, and have shared in its emotions? However, centuries are but seconds in the great process of the development of advancing humanity. Yet the rising curve has small bendings in it, and it is very inconvenient to find oneself in such a segment of its descending portion." (Letters to Varnhagen von Ense.)

to deny that the civilisation of to-day is greatly superior, in its practical morality, to the moral condition of the world at any other period; and regarding the very intimate relations which exist between the physical and moral laws of the universe, it is certainly impossible to believe that the great intellectual development which is taking place in mankind will not be faithfully and clearly echoed in moral advancement. Since man has quite recently devoted himself to the only method of gaining true knowledge by a patient investigation of the laws of nature, he has acquired the power of controlling and using for his purposes those natural forces before which in his infancy he fell prostrate in deepest terror and veneration. Unmindful of Neptune's anger, he now rides safely over the fury that at one time overwhelmed him, and guides with quiet confidence his frail vessel through the ocean's lashing rage to a sure haven; he skims with wondrous speed the rugged surface of the earth; and even directs to his humblest purposes that terrible lightning-force before which he once grovelled in uttermost helplessness and abasement. And is there not great moral progress in this improved attitude? Save in certain baroarous parts, men no longer now build altars to appease the fury of the hurricane, or offer sacrifices to propitiate the anger of the pestilence; for they have discovered that both hurricane and pestilence pursue their devastating courses in accordance with fixed, unchanging laws. In place, then, of the miserable superstition, praying to nature, there is the intellectual effort to bring human life into harmony with nature; in place of degeneration and destruction from ignorance of, and disobedience to, the physical laws, there are development and salvation from knowledge of, and obedience to, them. But it is simply impossible that man should place himself in faithful obediencc to the physical laws without bringing himself more or less plainly into subjection to the moral laws; he clearly cannot bring himself into complete harmony with a part of nature but by bringing himself into harmony with the whole of nature.* Since he has acquired a knowledge of the laws by which certain diseases come, he has endeavoured to prevent them; but as the individual cannot do that for himself without doing it at the same time for others, he must, were it necessary, even without merit of his own, be made moral. But it is not required of him to do good on compulsion; for as soon as ever men have attained to a sincere, intellectual recognition of the causes and laws of events, there inevitably springs up the correlative moral cognition—the intellectual cognition of their duties with regard to the events. Accordingly, we observe that, with advancing intellectual development, great efforts are being made by the favoured few to improve the condition of the poverty-stricken many—by attention to sanitary principles to improve their physical state, and by education to make them wiser, happier, and

* Denn wo Natur in reinen Kreise waltet
Ergreifen alle Welten sich. ('Faust,' p. 367.)

better. It has been made manifest, too, that it is cheaper and more philosophical to prevent crime than to punish it, and so reformatories and ragged schools are taking their places in establishing that empire of love which is to cast out hate. When we reflect on how great a part of the vice, crime, and disease amongst mankind is palpably produced by disobedience to the physical laws of nature, it seems impossible that, when men were in complete ignorance of these laws, they should have successfully carried into effect the principles of morality.* And it may fairly be supposed that systems of morality, of unquestionable excellence in themselves, have failed adequately to influence the mass, solely from the impossibility of an intellectual recognition of them by the mass—an impossibility which was mainly, of course, owing to the low state of mental development, but which may in part also be attributed to the method by which truths, which should have been made intellectual convictions, were dogmatically enforced as maxims not to be inquired into or questioned, although inquiry and questioning could only have added to their certainty. Now, however, in the intellectual development which results from observation of the causes and laws of events in the physical and moral world, we have a certain guarantee of moral progress. And this should teach us how fearful a thing it would have been if the principles of morality had not been the same from the beginning; forasmuch as mankind would then have been loosed from the sure anchor which has mercifully held it during the blind struggles of infancy to pass to immediate destruction. Happily the moral laws are as sure as the physical laws; and what we have the best reason to believe is that there is in humanity a large amount of undeveloped mentality, which, when developed, shall be effectual in practically realising the long-known and long-neglected principles of morality.

That the development through which nature is progressing points to a more complete realisation of moral law in connection with intellectual progress, would seem to be indicated by the reflections which palæontology suggests. The fossils of prodigious size show that the animals of extinct species were much larger and more destructive than any which exist at the present day. Savage animals, that are now banished to the dark places of the earth, at one time roamed over the whole surface thereof. The lion, which must now be sought in its distant lair, then existed in England and in Germany. The

* J. Hollingshead, in his 'Ragged London in 1861,' who has lived amongst the poor and knows their ways, says:—"The simplest forms of insurance are neglected by them .... early reckless marriages are contracted—marriages, as I have said before, that are as much a dissipation as gin-drinking or any other abomination. Children are produced without thought, set upon their feet without clothing, taught to walk, turned into the street without food or education, and left to the ragged school, the charitable public, or the devil. . . . They increase and multiply, and all for what? To become paupers; to glut the labour market; to keep their wages down at starvation point; to swell the profits of capital."

existing sloth of South America was then represented by the gigantic *mylodon* and *megatherium;* the armadillo by the huge *glyptodon*, one of the smaller species of which measured nine feet in length. The *dipratodon*, which was the representative of the kangaroo in Australia, had a skull which was three feet in length; and the *thylacoles*, a carnivorous marsupial, was not inferior in size to the lion. Destruction seemed to be everywhere the law of nature. The experience of the present day, on the other hand, proves that there are very few animals which may not be tamed and made use of by man; and the existence of societies for the prevention of cruelty to animals indicates that he, at any rate, is becoming alive to the duties under which he lives with regard to other animals. The disappearance from off the earth of those vast and formidable creatures of palæontological ages, together with the changes that are taking place on the earth at the present day, seem, then, to be prophetic of an empire of love, and dimly to foreshadow a far distant period when, perhaps, "the lion shall lie down with the lamb, and a little child shall lead them." As regards man, in truth, there can be no question that, if nature is to progress in mental development through him, love and virtue must replace cruelty and vice; taught by the records of the past, that the nation which has used the sword has hitherto perished by the sword, he must contentedly beat his sword into a ploughshare. For that which palæontological reflections suggest, and which history, pointing again and again the moral, produces the conviction of, is that which simple scientific observation of the natural course of the development of mind compels us gladly and confidently to anticipate; it is the realisation in general practice of those sublime principles which revelation has inculcated. And such, happily, will be the functional expression of the superior type of brain amongst modern civilised nations.*

That which is true of nations is plainly none the less true of the units forming them. Fulfilling the law of progression from the comparatively general perception of the material properties of a few simple objects to the more special perception of the complex relations of many objects, the individual mind advances in time to the conception of moral relations, and manifests itself in the moral sentiments, sense, cognitions, or feelings. The lower animal has evidently a perception of the highest object, namely, man, but it is for the most part only a simple perception of him as a material object, whilst the perception which one human being, when rightly developed, has of another is, as it embraces his moral relations, a much more complex result. To the perfection of this result indivi-

* Regarding which we might call to mind the gentle character—rudimentary moral, as it were—of the Ateles, which alone amongst monkeys has those convolutions generally considered characteristic of the human brain—the 'première pli de passage,' and the 'deuxième pli de passage.'

dual mental development rightly progresses; and whosoever, from feebleness, indolence, or frailty, stops very early on the way, is very much in the position of a Bosjesman looking at a tree as compared with an accomplished botanist regarding the same object. Though man is endowed with a noble birthright, he must labour hard to assert it; for it is by no means sufficient for him to open his eyes upon the world, but absolutely necessary that he look into it. He is gifted with sight that he may by his own exertions get insight, and the most successful intuition is founded on a very careful and continued previous mental training. Now, if the individual fails to assimilate his inner conscious life to the wondrous intelligence of nature; that is, if he simply fails in mental development, and no more, his posterity may, under favorable circumstances, continue the development; but if he not only fails to advance, but actually goes backwards, there is every probability that his posterity will continue the retrogression; and that, as in the nation so in the family, nature will do away, for reissue under better auspices, with degenerate and unavailable material. By the law of causality evil must produce its kind. So close and delicate, too, is the relationship amongst mankind, that many innocent people are miserably affected by the degeneration of one man, whether degenerate in crime or vice or in disease. He may verily be said to keep back the universe by so much. On the other hand, the great and good man not only, as Solomon says, "leaves an inheritance to his children's children," but beneficially affects all with whom he is brought in contact, and the universe advances so much by him. As, according to geology, the most important mountain ranges lift up and sustain on their sides the beds of rocks which form the inferior groups of hills around them, so likewise the strong and moral man lifts up and supports the weight of multitudes of inferior mortals. In the great revolutions of the world, whether political, social, religious, or purely intellectual, we discern the central peak issuing from the heart of nature, and the lower surface range of hills resting on its sides. But every individual who is labouring sincerely and faithfully after the just development of his faculties, however humble his sphere may be, is to some extent aiding the onward progress of nature, which is then developing through him. And though he may not rise to the towering height of a world's hero, his service is not forgotten of nature, but his good deeds have their place in the plan of development, and go on working through all time.

In the innate eagerness of men for knowledge, and their restless pursuit of truth, and in the intense gratification which their labour affords them, we seem again to recognise the benevolent purpose which has, from the beginning, been striving to advance life to a higher grade. And as if more surely to effect this, it has been ordained that happiness shall not attend the acquisition of know-

ledge so much as the pursuit of it.* Man does not feel so great satisfaction on reaching the goal as to induce him to stay there; but he does feel so great a pleasure in struggling for it, that when the course is over he is eager to start again. And this he joyously does, though he has but the faintest possible notions of the end for which he is labouring under the sun. Sufficient is it for each one to feel that, with the definite aim of the development of his moral and intellectual nature before him, he must work definitely for that object, must pursue with quiet constancy his course, "like a star without haste, yet without rest;" in other matters, outside his orbit and beyond the reach of his faculties, being content to "stretch lame hands of faith," and "faintly trust the larger hope."

As far as we can judge, the force of the universe is a constant quantity. Nothing appears to be added, and nothing is taken away. When the force of man is augmented in mental development, it is evidently at the expense of the forces of nature; and when man degenerates, nature increases at his expense. The correlation which is believed to exist between the physical forces may well be supposed to exist between them and the mental or vital force. Speculation on this matter is, however, of no avail, and must always come back to the place where it has been times and times before. We can say no more now than what Euripides said in the 'Olympiads'—"All things are but a mingling and a separation of the mingled, which are called birth and death by ignorant mortals." Love is the creative power, viewing it on the moral side, which mingles and makes harmony, while hate is the destructive power which separates and makes discord. With the progressing development of nature love seems to be increasing at the expense of discord, and manifest order to be superseding seeming confusion, or rather, advancing knowledge is becoming conscious of the love that there is in every apparent evil.† In fact, the wider and deeper our insight becomes, and the more clearly do we perceive love working in every event of nature, all-embracing, all-supporting, all-powerful. It will be man's glory and the accomplishment of his destiny to reflect in his life the clear, pure light of love, instead of the coloured reflection which his infirmities now produce. So doing, he will realise the possibilities of a type

* Ancients and moderns have often expressed this truth, as Sir W. Hamilton, in his 'Lectures on Metaphysics' shows. "Si je ténais la vérité captivé dans la main, j'ouvrais la main afin de poursuivre encore la vérité," said Malebranche.

† On which subject we may very properly refer to the grand utterance of the 'Pater profundus' in Göethe's 'Faust,' commencing

"Wie Felsenabgrund mir zu Füssen,"
&c. &c. &c. &c.,

and ending

"Sind Liebesboten, sie verkünden
Was ewig schaffend uns umwallt."

which, in the possession of so great and noble a potentiality, is exalted immeasurably beyond all other types in nature.

> "Arise and fly
> The reeling Faun, the sensual feast;
> Move upward, working out the beast,
> And let the ape and tiger die."

Report on Gheel by the Commission of the Medico-Psychological Society of Paris, read at the sitting of the Society, December 30th, 1861.

[THE French alienists, as deeply interested as we have been in this country, in the much-mooted question of the value of the Gheel system, have preceded us in an earnest and praiseworthy effort to solve it with an impartial and educated judgment. At the meeting of the eminent Medico-Psychological Society of Paris, held in July last, the society formed a commission to visit Gheel and to report. The commission consisted of the following eminent alienists:—MM. Michèa, Moreau, Mesnet, and Jules Falret, Trelât and Baillarger. The report has been drawn up by M. Jules Falret. The multiplied writings upon Gheel which have hitherto been put before the general and medical public have dealt, for the most part, only with the surface of the system, and too frequently with its sentimental appearances; this careful consideration, therefore, of its merits and demerits, founded upon a minute investigation made by a commission of eminent psychologists, is of great value. The early pages of the report, in which the details of the Gheel system are described, have been omitted by us, because they do not differ materially from the descriptions given in these pages by the able pens of Dr. Cox and Dr. Sibbald, and even in the present number by Dr. Carmichael McIntosh.—ED.]

We have to record the favorable impression which we have received from the inspection and examination of many of the nurses* of Gheel, of the public spirit which reigns among the inhabitants of this colony, and the conduct of the majority of them among their patients, without dwelling upon unfavorable instances (happily exceptional) of nurses who are unfaithful to their trust. These acts are, however, now severely checked; they become more and more rare in proportion as the central administra-

* We have in this paper rendered the French *nourricier* by the word *nurse*, which scarcely, however, seems to convey the exact meaning; a stricter translation would be *foster-father;* it is used in the paper to signify the person in charge of the lunatic.

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