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I. CONSCIENCE IN ANIMALS.

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AMONG several other topics which are dealt with in an interesting article headed "Animal Depravity" that appeared in the number of this Journal for October last, the writer alludes to the question as to whether or not the rudiments of a moral sense are discernible in animals. This question I consider to be of so much importance from a psychological point of view that, although a great deal of observation which I have directed towards its enlightenment has hitherto yielded but small results, I am tempted to publish the latter, such as they are, in the hope that, if they serve no better end, they may perhaps induce some other observers to bestow their attention upon this very interesting subject.

I may first briefly state what I conceive to be the theoretical standing of the subject. At the present day, when the general theory of evolution is accepted by all save the ignorant or the prejudiced, the antecedent probability is overwhelming that our moral sense, like all our other psychological faculties, has been evolved. The question as to the *causes* of its evolution has been discussed in the "Descent of Man," and this with all the breadth of thought and force of fact so characteristic of the writings which have exerted an influence upon human thought more profound than has been exerted by the writings of any other single man—not even excepting Aristotle in Philosophy or Newton in Science. Mr. Herbert Spencer, also, has treated of this subject, and, if his wonderful "programme" is ever destined to attain completion, we may expect copious results when his great powers are brought to bear upon the "Principles of Morality." Meanwhile, however, we have ample evidence to render it highly probable that at any rate the leading causes in the development of our moral sense have had their origin in the

social instincts. Indeed, to any one who impartially considers this evidence in the light of the general theory of evolution, it must appear well-nigh incredible that so considerable a body of proof can ever admit of being overcome. Nor is this all. Not only is it true that so much success has attended Mr. Darwin's method of determining synthetically the causes which have been instrumental in evolving the moral sense,* but, long before any scientific theory of evolution had been given to the world, our great logician—following in the track of Hume (whose part in this matter has not, I think, been sufficiently appreciated), Bentham, and others—proved analytically, to the satisfaction of all competent and impartial thinkers, that the moral sense is rooted in “the greatest amount of happiness principle” as its sustaining source. In other words, John Stuart Mill, by examining Conscience as he found it to exist in Man, showed that it depends upon the very principle upon which it ought to depend, supposing Mr. Darwin's theory—elaborated, be it remembered, without any reference to Mr. Mill's analysis, and arrived at by a totally different line of enquiry—concerning the causes of its evolution to be the true one.

Stronger evidence, then, as to the physical causes whose operation has brought human conscience into being, we could scarcely expect, in the present condition of physical science, to possess. It is unnecessary, however, in this place to enter into the details of this evidence, as almost every educated person must be more or less acquainted with them. I shall therefore pass on to the next point which concerns us—namely, supposing the causes of our moral sense to have had their origin in the social instincts, where and to what extent should we expect to find indications of an incipient moral sense in animals? First, then, what do we mean by conscience? We mean that faculty of our minds which renders possible remorse or satisfaction for past conduct, which has been respectively injurious or beneficial to others.† This, at least, is what I conceive conscience to be in its last resort. No doubt, as we find it in actual operation, the faculty in question has reference to ideas of a higher abstraction than that of the fellow man whom we have injured or benefitted. In most cases the moral sense has reference to the volitions of a Deity, and in others to

* I willingly endorse the just tribute recently paid to this part of Mr. Darwin's work by Prof. Clifford:—“To my mind the simplest and clearest and most profound philosophy that was ever written upon this subject is to be found in chapters ii. and iii. of Mr. Darwin's ‘Descent of Man.’”—*Fort. Rev.*, p. 794.

† For reasons which may easily be gathered from the next succeeding sentences, I omit *conscientious* ideas of what is due to *self*.

the human race considered as a whole. But if the moral sense has been developed in the way here supposed, its root-principle must be that which has reference to ideas of no higher abstraction than those of parent, neighbour, or tribe. Now, even in this its most rudimentary phase of development, conscience pre-supposes a comparatively high order of intelligence as the prime condition of its possibility. For not only does the faculty as above defined require a good *memory* as a condition essential to its existence, but—what is of much greater importance—it also requires the power of *reflecting upon past conduct*; and this, it is needless to say, appears to be a much rarer quality in the psychology of animals than is mere memory.

Thus, if Mr. Darwin's theory concerning the origin and development of the moral sense is true, we should not expect to find any indications of this faculty in any animals that are too low in the psychological scale to be capable of reflecting upon their past conduct. Whether this limitation does not exclude all animals whatever is a question with which I am not here concerned. I merely assert that if the theory in question is the true one, and if no animals are capable of reflecting upon their past conduct, then no animals can possess a moral sense, properly so-called. And from this of course it follows that if any animals can be shown to possess a moral sense, they are thereby also shown to be capable of reflecting upon their past conduct.

Again, if Mr. Darwin's theory concerning the origin and development of the moral sense is true, it is self-evident that we should not expect to find any indications of this faculty in animals that are either unsocial or unsympathetic. Supposing the theory true, therefore, our search for animals in which we may expect to find any indications of a moral sense is thus seen to be very restricted in its range: we can only expect to find such indications in animals that are highly intelligent, social, and sympathetic. Since by the hypothesis conscience requires a comparatively rare collocation of conditions for its development, we must expect to find it a comparatively rare product.

Lastly, as it is quite certain that no animal is capable of reflecting upon past conduct in any high degree, and as we have just seen that the moral sense depends upon the faculty of so reflecting, it follows that we cannot expect to find any animal in which the moral sense attains any high degree of development.

We are now in a position to draw some important distinctions. There are several instincts and feelings which,

when expressed in outward action, more or less simulate conscience (so to speak), but which it would be erroneous to call by that name. For instance, the maternal instinct, although it leads in many cases to severe and sustained self-denial for the benefit of the offspring, is nevertheless clearly distinct from conscience. The mother in tending her young does so in obedience to an inherited instinct, and not from any fear of subsequent self-reproach if she leaves her family to perish. She follows the maternal instinct, so long as it continues in operation, just as she would follow any other instinct; and it is, as it were, a mere accident of the case that in this particular instance the course of action which the instinct prompts is a course of action which is conducive to the welfare of others. An illustration will render this distinction more clear. In his chapter on the "Moral Sense" Mr. Darwin alludes to the conflict of instincts which sometimes occurs in swallows when the migratory season overtakes a late brood of young birds; at such times "swallows, house martins, and swifts frequently desert their tender young, leaving them to perish miserably in their nests." And further on he remarks—"When arrived at the end of their long journey, and the migratory instinct has ceased to act, what an agony of remorse the bird would feel, if, from being endowed with great mental activity, she could not prevent the image constantly passing through her mind, of her young ones perishing in the bleak north from cold and hunger." In other words, if we could suppose the mother bird under such circumstances to be capable of *reflecting upon her past conduct*, and as a consequence suffering an "agony of remorse," then the bird might properly be said to be *conscience-stricken*. And if we could suppose the bird, while still brooding over her young ones, to foresee the agony of remorse she would subsequently feel if she now yields to the stronger instinct by deserting her young, then the bird might properly be said to be acting *conscientiously*.

Again, mere fear of punishment must not be confused with conscience—it being of the essence of conscientious action that it should be prompted by feelings wholly distinct from fear of retaliation by the object of injury, whether by way of punishment or revenge. Conscience must be capable of effecting its own punishment if violated; otherwise the principle of action, whatever it may be, must be called by some other name.*

* Of course I recognise fear of punishment as an important factor in the *original constitution* of the moral sentiment; but, for reasons stated at the end of this article, we must, when treating of animal psychology, eliminate this factor when *conscience has become sufficiently developed to be "a law to itself."*

It is evident that conscience, as we find it in ourselves, is distinct from love of approbation and fear of disapprobation. Nevertheless, if our hypothesis concerning the development of the moral sense is the true one, we should expect that during the early phases of that development love of approbation and fear of disapprobation should have played a large part in the formation of conscience. For although, by the hypothesis, it is sympathy and not self-love that constitutes the seat of the moral sense, still the particular manifestations of self-love with which we are now concerned—viz., desire of approbation and dislike of the reverse—would clearly be impossible but for the presence of sympathy. “Mr. Bain has clearly shown that the love of praise, and the strong feeling of glory, and the still stronger horror of scorn and infamy, ‘are due to the workings of sympathy.’”^{*} I think, therefore, that in testing—by observations upon the lower animals—the truth of Mr. Darwin’s theory concerning the genesis of conscience, it would be no valid objection to any satisfactory instances of conscientious action in an animal to say that such action is partly due to a desire of praise or a fear of blame. This would be no valid objection, because, in the first place, it would in most cases be impossible to say how far the implication is true—how far the animal may have acted from pure sympathy or regard for the feelings of others, and how far from an admixture of sympathy with self-love; and in the next place, even if the implication be conceded wholly true, it would not tend to disprove the theory in question. If an animal’s sympathies are so powerful that, even after being reflected through self-love, they still retain force enough to prompt a course of action which is in direct opposition to the more immediate dictates of self-love, then the sympathies of such an animal are hereby proved to be sufficiently exalted to constitute the beginnings of a conscience, supposing the theory which we are testing to be the true one.

Similarly, there is an obvious distinction in ourselves between injured conscience and injured pride. But if conscience has been developed in the way here supposed, it follows that in the rudimentary stages of such development the distinction in question cannot be so well defined. Pride presupposes consideration for the opinion of others, and this in turn—as we have just seen—presupposes sympathy, which is the foundation-stone of conscience. Now it is certain that long before we reach, in the ascending scale of animal psychology, intellectual faculties sufficiently exalted to admit

^{*} *Descent of Man*, p. 109 (1874). *Mental and Moral Science*, p. 254 (1868).

even of our suspecting the presence of an incipient moral sense, we can perceive abundant indications of the presence of pride. And forasmuch as animals that are high in the psychological scale frequently exhibit a very profound appreciation of their own dignity, we may pretty safely conclude that in no case can we expect to find indications of a moral sense in an animal without a greater or less admixture of pride.

I will now sum up this rather tedious preamble:—From Mr. Darwin's theory concerning the development of conscience, it appears to follow that the presence of this faculty in animals must be restricted—if it occurs at all—to those which are intelligent enough to be capable in some degree of reflecting upon past conduct, and which likewise possess social and sympathetic instincts. From the first of these conditions it follows, supposing Mr. Darwin's theory true, that in the case of no animal should we expect to find the moral sense developed in any other than a low degree.

There is no reason to suppose any mere *instinct* (such as the maternal) due to conscience; for an instinct acquired by inheritance is obeyed blindly, in order to avoid the uncomfortable sensation which ensues in a direct manner if it is not so obeyed,—whereas conscience enforces obedience only through a process of reflection;* the uncomfortable sensation which non-obedience entails in this case being only brought about in an indirect manner through the agency of re-presentative thought.

Although conscience in man is independent of, or distinct from, love of approbation, fear of reproach, and sense of pride, there is no reason why we should suppose conscience in its rudimentary forms to be independent of these passions. On the contrary, I think we should expect a rudimentary form of conscience to be more or less amalgamated with such passions; for long before the faculty in question has attained the highly differentiated state in which we find it to be present in ourselves, it must (by the hypothesis) have passed through innumerable states of lesser differentiation in which its existence was presumably more and more bound up with that of those more primary social instincts from which it first derived its origin. To us conscience means a massive consolidation of innumerable experiences, inherited and acquired, of remorse following one class of actions and gratification their opposites; and this massive body of

* *I. e., originally*: when once the *habit* of yielding obedience to conscience has been acquired, it becomes itself of the nature of an instinct—neglect to practise this habit giving rise immediately, or without any process of reflection, to an uncomfortable state of the mind.

experience has reference to ideas of an abstraction so high as to extend far beyond the individual, or even the community, which our actions primarily affect. No wonder, therefore, that when any course of action is being contemplated, conscience asserts her voice within us as a voice of supreme authority, commanding us to look beyond all immediate issues, inclinations, and even sympathies, to those great *principles* of action which the united experience of mankind has proved to be best for the individual to follow in all his attempts to promote the happiness or to alleviate the misery of his race. But with animals, of course, the case is different. They start with a very small allowance of hereditary experience in the respects we are considering; they have very few opportunities of adding to those experiences themselves; they probably have no powers of forming abstract ideas; and so their moral sense, rudimentary in its nature, can never be exercised with reference to anything other than concrete objects—relation, companion, or herd.

We may now proceed to answer the question already propounded, namely—Supposing Mr. Darwin's theory concerning the origin of the moral sense to be true, where among animals should we expect to find indications of such a sense? I think reflection will show that the three essential conditions to the presence of a moral sense are only complied with among animals in the case of three groups—namely, dogs, elephants, and monkeys. I need not say anything about the *intelligence* or the *sociability* of these animals, for it is proverbial that there are no animals so intelligent or more social. It is necessary, however, to say a few words about sympathy.

In the case of dogs sympathy exists in an extraordinary degree. I have myself seen the life of a terrier saved by another dog which stayed in the same house with him, and with which he had always lived in a state of bitter enmity. Yet when the terrier was one day attacked by a large dog, which shook him by the back and would certainly have killed him, his habitual enemy rushed to the rescue, and after saving the terrier had great difficulty in getting away himself.

With regard to elephants I may quote the well-known instance from the "Descent of Man":—"Dr. Hooker informs me that an elephant, which he was riding in India, became so deeply bogged that he remained stuck fast until next day, when he was extracted by means of ropes. Under such circumstances elephants seize with their trunks any object, dead or alive, to place under their knees, to prevent their sinking deeper in the mud; and the driver was dread-

fully afraid lest the animal should have seized Dr. Hooker and crushed him to death. But the driver himself, as Dr. Hooker was assured, ran no risk. This forbearance, under an emergency so dreadful for a heavy animal, is a wonderful proof of noble fidelity.”*

Many cases of sympathy in monkeys might be given, but I shall confine myself to stating one which I myself witnessed at the Zoological Gardens.† A year or two ago there was an Arabian baboon and an Anubis baboon confined in one cage, adjoining that which contained a dog-headed baboon. The Anubis baboon passed its hand through the wires of the partition, in order to purloin a nut which the large dog-headed baboon had left within reach,—expressly, I believe, that it might act as a bait. The Anubis baboon very well knew the danger he ran, for he waited until his bulky neighbour had turned his back upon the nut with the appearance of having forgotten all about it. The dog-headed baboon, however, was all the time slyly looking round with the corner of his eye, and no sooner was the arm of his victim well within his cage than he sprang with astonishing rapidity and caught the retreating hand in his mouth. The cries of the Anubis baboon quickly brought the keeper to the rescue, when, by dint of a good deal of physical persuasion, the dog-headed baboon was induced to leave go his hold. The Anubis baboon then retired to the middle of his cage, moaning piteously, and holding the injured hand against his chest while he rubbed it with the other one. The Arabian baboon now approached him from the top part of the cage, and, while making a soothing sound very expressive of sympathy, folded the sufferer in its arms—exactly as a mother would her child under similar circumstances. It must be stated, also, that this expression of sympathy had a decidedly quieting effect upon the sufferer, his moans becoming less piteous so soon as he was enfolded in the arms of his comforter; and the manner in which he laid his cheek upon the bosom of his friend was as expressive as anything could be of sympathy appreciated. This really affecting spectacle lasted a considerable time, and while watching it I felt that, even had it stood alone, it would in itself have been sufficient to prove the essential identity of some of the noblest among human emotions with those of the lower animals.

If there is any validity in the foregoing antecedent reflec-

* See also HOOKER'S *Himalayan Journal*, vol. ii., p. 333 (1854).

† I hope it is unnecessary to say that in detailing this and all the subsequent incidents, I carefully avoid exaggeration or embellishment of any kind.

tions, all who have the opportunity should make a point of observing whether any indications of conscience are perceptible in monkeys, elephants, or intelligent dogs. My own opportunities of observation have been restricted to the last of these animals alone, so I shall conclude this article by giving some instances which appear to me very satisfactorily to prove that intelligent and sympathetic dogs possess the rudiments of a moral sense.

I have a setter just now which has been made a pet of since a puppy. As he has a very fine nose, and is at liberty to go wherever he pleases, he often finds bits of food which he very well knows he has no right to take. If the food he finds happens to be of a dainty description, his conscientious scruples are overcome by the temptations of appetite; but if the food should be of a less palatable kind, he generally carries it to me in order to obtain my permission to eat it. Now, as no one ever beats or even scolds this dog for stealing, his only object in thus asking permission to eat what he finds must be that of quieting his conscience. It should be added that when he brings stolen property to me it does not always follow that he is allowed to keep it.

This same animal, when I am out shooting with him, sometimes of course flushes birds. When he does so he immediately comes to me in a straight line, carrying his head and tail very low, as if to ask for pardon. Although I speak reproachfully to him on such occasions, I scarcely ever chastise him; so it cannot be fear that prompts this demeanour.

One other curious fact may here be mentioned about this dog. Although naturally a very vivacious animal, and, when out for a walk with myself or any other young person, perpetually ranging about in search of game, yet if taken out for a walk by an elderly person he keeps close to heel all the time—pacing along with a slow step and sedate manner, as different as possible from that which is natural to him. This curious behaviour is quite spontaneous on his part, and appears to arise from his sense of the respect that is due to age.

The writer of the article on “Animal Depravity” makes the following quotation from an article of mine in “Nature” (vol. xii., p. 66):—“The terrier used to be very fond of catching flies upon the window-panes, and if ridiculed when unsuccessful was evidently much annoyed. On one occasion, in order to see what he would do, I purposely laughed immoderately every time he failed. It so happened that he did so several times in succession.—partly, I believe, in consequence of my laughing,—and eventually he became so

distressed that he positively *pretended* to catch the fly, going through all the appropriate actions with his lips and tongue, and afterwards rubbing the ground with his neck as if to kill the victim : he then looked up at me with a triumphant air of success. So well was the whole process simulated that I should have been quite deceived, had I not seen that the fly was still upon the window. Accordingly I drew his attention to this fact, as well as to the absence of anything upon the floor ; and when he saw that his hypocrisy had been detected he slunk away under some furniture, evidently very much ashamed of himself.”

Upon this case the author of the article on “Animal Depravity” very properly observes:—“This last point is most significant, fully overturning the vulgar notion of the absence of moral life in brutes, and of their total want of conscience.” I think this observation is warranted by the facts, for although I have heard it objected that the feeling displayed by the terrier in this case was that of wounded pride rather than of wounded conscience, still, from what has been previously said concerning this distinction in the case of animals, it will be seen that in this instance it is not easy to draw the line between these two sentiments.

The following instances, however,—all of which occurred with the terrier just mentioned—are free from this difficulty.

For a long time this terrier was the only canine pet I had. One day, however, I brought home a large dog, and chained him up outside. The jealousy of the terrier towards the new-comer was extreme. Indeed I never before knew that jealousy in an animal could arrive at such a pitch ; but as it would occupy too much space to enter into details, it will be enough to say that I really think nothing that could have befallen this terrier would have pleased him so much as would any happy accident by which he might get well rid of his rival. Well, a few nights after the new dog had arrived, the terrier was, as usual, sleeping in my bed-room. About 1 o'clock in the morning he began to bark and scream very loudly, and upon my waking up and telling him to be quiet he ran between the bed and the window in a most excited manner, jumping on and off the toilette-table after each journey, as much as to say—“Get up quickly ; you have no idea of what shocking things are going on outside.” Accordingly I got up, and was surprised to see the large dog careering down the road : he had broken loose, and, being wild with fear at finding himself alone in a strange place, was running he knew not whither. Of course I went out as soon as possible, and after about half-an-hour's

work succeeded in capturing the runaway. I then brought him into the house and chained him up in the hall; after which I fed and caressed him with the view of restoring his peace of mind. During all this time the terrier had remained in my bed-room, and, although he heard the feeding and caressing process going on downstairs, this was the only time I ever knew him fail to attack the large dog when it was taken into the house. Upon my re-entering the bed-room, and before I said anything, the terrier met me with certain indescribable grinnings and prancings, which he always used to perform when conscious of having been a particularly good dog. Now I consider the whole of this episode a very remarkable instance in an animal of action prompted by a sense of *duty*. No other motive than the voice of conscience can here be assigned for what the terrier did: even his strong jealousy of the large dog gave way before the yet stronger dread he had of the remorse he knew he should have to suffer, if next day he saw me distressed at a loss which it had been in his power to prevent. What makes the case more striking is, that this was the only occasion during the many years he slept in my bed-room that the terrier disturbed me in the night-time. Indeed the scrupulous care with which he avoided making the least noise while I was asleep, or pretending to be asleep, was quite touching,—even the sight of a cat outside, which at any other time rendered him frantic, only causing him to tremble violently with suppressed emotion when he had reason to suppose that I was not awake. If I overslept myself, however, he used to jump upon the bed and push my shoulder gently with his paw.

The following instance is likewise very instructive. I must premise that the terrier in question far surpassed any animal or human being I ever knew in the keen sensitiveness of his feelings, and that he was never beaten in his life.* Well, one day he was shut up in a room by himself, while everybody in the house where he was went out. Seeing his friends from the window as they departed, the terrier appears

* A reproachful word or look from me, when it seemed to him that occasion required it, was enough to make this dog miserable for a whole day. I do not know what would have happened had I ventured to strike him; but once when I was away from home a friend used to take him out every day for a walk in the park. He always enjoyed his walks very much, and was now wholly dependent upon this gentleman for obtaining them. (He was once stolen in London through the complicity of my servants, and never after that would he go out by himself, or with anyone whom he knew to be a servant.) Nevertheless, one day while he was amusing himself with another dog in the park, my friend, in order to persuade him to follow, struck him with a glove. The terrier looked up at his face with an astonished and indignant gaze, deliberately

to have been overcome by a paroxysm of rage; for when I returned I found that he had torn all the bottoms of the window-curtains to shreds. When I first opened the door he jumped about as dogs in general do under similar circumstances, having apparently forgotten, in his joy at seeing me, the damage he had done. But when, without speaking, I picked up one of the torn shreds of the curtains, the terrier gave a howl, and rushing out of the room, ran up stairs screaming as loudly as he was able. The only interpretation I can assign to this conduct is, that his former fit of passion having subsided, the dog was sorry at having done what he knew would annoy me; and not being able to endure in my presence the remorse of his smitten conscience, he ran to the farthest corner of the house crying *peccavi* in the language of his nature.

I could give several other cases of conscientious action on the part of this terrier, but as the present article is already too long I shall confine myself to giving but one other case. This, however, is the most unequivocal instance I have ever known of conscience being manifested by an animal.

I had had this dog for several years, and had never—even in his puppyhood—known him to steal. On the contrary, he used to make an excellent guard to protect property from other animals, servants, &c., even though these were his best friends.* Nevertheless, on one occasion he was very hungry, and in the room where I was reading and he was sitting, there was, within easy reach, a savoury mutton chop. I was greatly surprised to see him stealthily remove this chop and take it under a sofa. However, I pretended not

turned round, and trotted home. Next day he went out with my friend as before, but after he had gone a short distance he looked up at his face significantly, and again trotted home with a dignified air. After this my friend could never induce the terrier to go out with him again. It is remarkable, also, that this animal's sensitiveness was not only of a selfish kind, but extended itself in sympathy for others. Whenever he saw a man striking a dog, whether in the house or outside, near at hand or at a distance, he used to rush to the protection of his fellow, snarling and snapping in a most threatening way. Again, when driving with me in a dog-cart, he always used to seize the sleeve of my coat every time I touched the horse with the whip.

* I have seen this dog escort a donkey which had baskets on its back filled with apples. Although the dog did not know that he was being observed by anybody, he did his duty with the utmost faithfulness; for every time the donkey turned back its head to take an apple out of the baskets, the dog snapped at its nose; and such was his watchfulness, that, although his companion was keenly desirous of tasting some of the fruit, he never allowed him to get a single apple during the half-hour they were left together. I have also seen this terrier protecting meat from other terriers (his sons), which lived in the same house with him, and with which he was on the very best of terms. More curious still, I have seen him seize my wristbands while they were being worn by a friend to whom I had temporarily lent them.

to observe what had occurred, and waited to see what would happen next. For fully a quarter of an hour this terrier remained under the sofa without making a sound, but doubtless enduring an agony of contending feelings. Eventually, however, conscience came off victorious, for, emerging from his place of concealment and carrying in his mouth the stolen chop, he came across the room and laid the tempting morsel at my feet. The moment he dropped the stolen property he bolted again under the sofa, and from this retreat no coaxing could charm him for several hours afterwards. Moreover, when during that time he was spoken to or patted, he always turned away his head in a ludicrously conscience-stricken manner. Altogether I do not think it would be possible to imagine a more satisfactory exhibition of conscience by an animal than this; for it must be remembered, as already stated, that the particular animal in question was never beaten in its life.*

II. NATURE'S SCAVENGERS.

IN these days of Sanitary Reform it may be interesting to examine what is the real state and value of existing natural arrangements for the removal of nuisances, and for the disinfection of the waters and the atmosphere. The subject may, fortunately, now be discussed without calling forth those strong expressions of affected disgust with which it would have been greeted not many years ago. It has a very obvious practical bearing: we have to consider what is the actual utility of Nature's Scavengers,—in how far we may trust to their action,—when and where we should assist and cherish them, and under what circumstances we should seek to supersede them altogether. Nor is the question without a speculative interest. The efficiency and completeness, or the opposite qualities of Nature's agencies for dealing with refuse, may throw some valuable cross-lights upon the origin of species, and indeed upon the whole debate

* This latter point is most important because, although the moral sentiment in its incipient stages undoubtedly depends in a large measure upon fear of punishment, still in its more developed state this sentiment is as undoubtedly independent of such fear (Cf. BAIN, "Mental and Moral Science," pp. 456-9, 1875); and forasmuch as in our analysis of animal psychology we can be guided only by the study of outward actions, and forasmuch as the course of action prompted by direct fear of punishment will nearly always be identical with that prompted by true conscience, it is of the first importance to obtain cases such as the above, in which mere dread of punishment cannot even be suspected to have been the motive principle of action.