alluded at the outset of this discussion. There is a fact, too, relating to insane drink-cravers themselves which may prove both a help and a hindrance. It is this:—The majority of them belong to the better class of society—to the educated class, that is, from the superior artisan upwards, who live in comfort and perhaps in affluence, and their whole number, great as it is, is not so great as is often supposed. There may be doubts as to the accuracy of this opinion, but careful inquiry will cause their disappearance. We refer, of course, exclusively to those persons of whom it could be certified that they labour under a special form of insanity which has excessive intemperance as one of its symptoms. Not a few of these people could thus defray the cost of a legalised detention out of their own pockets, and no aid from the Consolidated Fund, or from rates of any kind, would be needed either to establish or to maintain the institutions in which their detention would take place. Such institutions would be the outcome of private adventure, under State supervision and control, and Parliament might be asked to do nothing more than sanction (with limitations) the compulsory detention in institutions licensed and supervised by the State, of persons found after legal inquest of some prescribed kind to be in the condition which the resolution defines. If no such persons presented themselves, and no such institutions were created, then the law would be a dead letter. Such legislation would be in the fullest sense permissive. It would permit those to take advantage of its provisions who could themselves afford the cost, or who could do so through help from charitable and public organisations. At the same time it would, in a certain sense, be tentative, since it would yield that experience which is so much needed.

Conscience in Animals.

In a paper on "Conscience in Animals," which Mr. G. J. Romanes has reprinted from the "Quarterly Journal of Science," he tells the following story of a monkey's sympathy:—

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 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.

In the same paper he relates the following stories of an intelligent terrier:—

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.

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 bedroom. About one 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 bedroom, 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 bedroom, 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 bedroom 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

* 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 gentlemen 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 any one 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 turned round,

himself, while everybody in the house where he was went out. Seeing his friends from the window as they departed, the terrier appears 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 savory mutton chop. I was greatly surprised to see him stealthily remove this chop and take it under a sofa. However, I pretended not to observe what had occurred, and waited to see what would happen next. For fully

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.

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.

The Theory of Vision.

The following extract is from an article on the Theory of Vision in the "Revue Scientifique" of March, 1877:—

The rarer the instances are of the cure of those born blind, the more is it to the interests of science to record them, and to study them carefully; and it is a fortunate occurrence for science when an operation of this kind is made by a skilful operator, and one who is at the same time an intelligent, well informed, and attentive observer. This combination has been twice fulfilled within some years, at the Ophthalmic Hospital, Lausanne. A born-blind was cured in 1852, by Dr. Recordon, and another twenty-three years later by his colleague, Dr. Marc Dufour. Here are the particulars of the second case.

A young Savoyard, *Noé M.*, was born blind in the village of Contamine, on the road Du Col du Bonhomme (Haute Savoie). He grew up in this secluded part of the Alps, in the midst of a population who had probably no idea that his cure was possible. Dr. Martin, of Saint Gervais les Bains, met him one day, perceived the curability of his malady, and sent him to Lausanne; he was then twenty years of age. *Noé M.* was afflicted with a congenital cataract of both eyes, he had besides a corneal opacity, more particularly of the left eye, and a marked movement of nystagmus or spasmodic winking. His right eye was operated upon on the 14th of June, 1875. The operation did not present any remarkable incident, and succeeded well. The cure was normal. As soon as it became possible, M. Dufour carried on a series of observations and experiments, employing convex glasses adapted to obtain retinal images as distinct as possible. In order to appreciate the results of these observations and experiments from a psychological point of view, it is necessary to enter into some considerations on the general state of the question.

Numerous observations and easy experiments show that the object of the direct perception of sight is, and always remains, a simple surface