

system the opposed propositions, which do show their subject to be unreasonable, are intended to do duty as contradictories. But in Kant's system the opposed propositions in an antinomy are only seeming contradictories, are virtually contraries, and their common subject remains the subject of an intelligible proposition, and one that Kant believes himself to have substantiated, after the contraries are invalidated: so that the subject is after all amenable to the processes of human thought, though not representing an object of experience. I dare not further trespass on the columns of NATURE to comment upon Prof. Clifford's views of the two legs of Kant's philosophy! Certainly the one leg is wholly due to my opponent's "exuberant imagination:" it is Hamilton's leg, not Kant's.

Athenæum Club, Feb. 17

C. M. INGLEBY

### Inherited Feeling

THE remarkable case of an inherited feeling of dislike for a special class of persons, communicated by Mr. Darwin, appears to me to support a view I have long held (but not yet published) as to the explanation of another class of so-called instincts. The three separate instances given in which the dogs showed a violent antipathy to butchers, either without seeing them or when they were dressed as gentlemen, clearly indicates that it was through the sense of smell that the painful sensation was experienced; and this is quite in accordance with the wonderful delicacy and importance of this sense in most animals, and especially in dogs. It is natural to suppose that some ancestor of these dogs was systematically and cruelly ill-treated by several butchers, perhaps from some thievish propensity or other bad habit which required frequent punishment, so that the smell of a butcher came to be invariably associated with pain and a desire for revenge. But the most important fact to observe is, that there must be some peculiar odour developed in human beings by constant contact with flesh, which a dog can recognise apart from individual peculiarities and in spite of perfect disguise. Now the power many animals possess to find their way back over a road they have travelled blindfolded (shut up in a basket inside a coach for example) has generally been considered to be an undoubted case of true instinct. But it seems to me that an animal so circumstanced will have its attention necessarily active, owing to its desire to get out of its confinement, and that by means of its most acute and only available sense it will take note of the successive odours of the way, which will leave on its mind a series of images as distinct and prominent as those we should receive by the sense of sight. The recurrence of these odours in their proper inverse order—every house, ditch, field, and village having its own well-marked individuality—would make it an easy matter for the animal in question to follow the identical route back, however many turnings and cross-roads it may have followed. This explanation appears to me to cover almost all the well-authenticated cases of this kind.

ALFRED R. WALLACE

I AM able to corroborate the remarkable fact mentioned in Dr. Huggins's letter in your last.

My father possessed a mastiff, a son of Sybil, daughter of Turk, who has, ever since he was a pup, evinced the same antipathy to butchers. We have hitherto been unable to explain it, for he is always perfectly good tempered with other tradesmen who come to the house. The butchers have, on several occasions, tried to propitiate him by throwing him presents of meat, but although willingly enough received, it has done nothing towards abating his hostility.

H. G. BROOKE

Hale Carr, Altrincham, Feb. 15

I HAVE a cat, of a long-haired breed, whose aversion to dogs is unusually strong. Last autumn, six kittens of hers, under two days old, were in a corner of the kitchen where they had had no opportunity of making acquaintance with any dog; yet, on being stroked (in their mother's absence) by a hand which a dog had just licked, more than one of them "swore" violently. This was repeated several times, but the little creatures showed no dislike to being touched with a clean hand.

A LOVER OF ANIMALS

Two or three months ago I was walking with my two little girls near the railway bridge at West Kensington, when the

children (who always find the attraction of a fine dog irresistible) made me stop to admire a tall and remarkably handsome mastiff, apparently the property of a man who stood by with a hand-barrow. He was speaking to two other men of this dog, and of another of the same kind which he had at home, and telling them that they were quiet and amiable to all men but butchers, and that it was not safe for a butcher to come near either of them. One of the men said that he believed all dogs of that breed showed the same antipathy; and added that when they were left loose at night to guard premises, they would always allow a policeman to enter.

This chance conversation is perhaps hardly worth troubling you with, as I have no means of ascertaining whether these dogs claimed kindred with Turk, but I send it to you, nevertheless.

M.

Kensington Square, Feb. 17

### EFFECT OF LIGHT ON SELENIUM DURING THE PASSAGE OF AN ELECTRIC CURRENT.\*

BEING desirous of obtaining a more suitable high resistance for use at the Shore Station in connection with my system of testing and signalling during the submersion of long submarine cables, I was induced to experiment with bars of selenium, a known metal of very high resistance. I obtained several bars varying in length from 5 to 10 centimetres, and of a diameter from 1 to 1½ millimetres. Each bar was hermetically sealed in a glass tube, and a platinum wire projected from each end for the purpose of connection.

The early experiments did not place the selenium in a very favourable light for the purpose required, for although the resistance was all that could be desired—some of the bars giving 1,400 megohms absolute—yet there was a great discrepancy in the tests, and seldom did different operators obtain the same result. While investigating the cause of such great differences in the resistance of the bars, it was found that the resistance altered materially according to the intensity of light to which it was subjected. When the bars were fixed in a box with a sliding cover, so as to exclude all light, their resistance was at its highest, and remained very constant, fulfilling all the conditions necessary to my requirements; but immediately the cover of the box was removed, the conductivity increased from 15 to 100 per cent. according to the intensity of the light falling on the bar. Merely intercepting the light by passing the hand before an ordinary gas-burner placed several feet from the bar increased the resistance from 15 to 20 per cent. If the light be intercepted by rock salt or by glass of various colours, the resistance varies according to the amount of light passing through the glass.

To ensure that temperature was in no way affecting the experiments, one of the bars was placed in a trough of water so that there was about an inch of water for the light to pass through, but the results were the same; and when a strong light from the ignition of a narrow band of magnesium was held about nine inches above the water the resistance immediately fell more than two-thirds, returning to its normal condition immediately the light was extinguished.

### PARTING BANQUET TO PROF. TYNDALL

ON the evening of February 4 Prof. Tyndall's visit to the United States was crowned by a banquet at Delmonico's, New York, at which there were present about 200 of the most distinguished citizens of the country, presided over by the Hon. William M. Evarts. Among the company present were the following:—The Rev. Dr. Bellows, Parke Godwin, Dr. Draper, A. M.

\* Communicated to the Society of Telegraph Engineers, February 12, by Mr. Latimer Clark, from Mr. Willoughby Smith, Electrician to the Telegraph Construction Company.