

Intellect in Brutes

I AM in possession of an intelligent pointer dog, not quite two years old. The manner in which he makes his exit from the garden brought forcibly to my recollection Prof. Möbins's experiment with a pike, as narrated by Mr. Romanes in his article "Animal Intelligence" in the *Nineteenth Century* for October 1878, p. 659. A pike took three months to learn that he could not reach a minnow separated from him by a sheet of plate glass, and after its removal he never afterwards attacked the minnow. As Mr. Romanes says: "the firmly-established association of ideas never seems to have become disestablished." My pointer seems to arrive at an established association of ideas as fixed as the pike, a fact extremely interesting, considering that the dog is much higher in the scale of life than a fish.

The dog, when young, could only escape out of the garden through a small and difficult gap between the gate-post and the fence—a rose one. Some months ago a spar was broken out of the gate, and though the hole thus made was from the ground upwards, and quite large enough to allow of the passage of a large dog through it, yet it never took advantage of it. About a month ago a friend presented me with a young dog of the same variety, and it *at once* discovered the hole in the gate and went through it. But the older dog continues still to use the old gap between the post and the fence, and singularly enough it will see its companion pass through the hole in the gate, and it will even put its head through the vacant space and then turn aside and painfully crawl through the fence gap, which as a young dog it had discovered and used.

The discussion concerning the intelligence of the lower animals carried on in *NATURE* has interested some of us here. The following, regarding the gnawing of lead by rats, may perhaps interest your readers. Capt. Moir of the 99th Regiment, at present stationed here, showed me three bullets, still in the cartridge (for the Martini-Henry rifle), half eaten away by the rats, at Fort Chelmsford, Zululand. The rodents had made their way into the haversack in which the cartridges were, cut the strings tying the packet of cartridges, tore the brown paper off in which they were rolled, and then nibbled at the balls. These cartridges are made up in thin brass—which in no case was gnawed at. Nearly the longitudinal half of the exposed part of one bullet was eaten away; they had eaten into half the bullet, crossways of another cartridge, and in the third case they had nibbled off the point of a bullet.

It cannot be supposed that they nibbled for nibbling's sake; doubtless the smell of the grease in the cartridges attracted their attention to the haversacks, and the smell of the grease behind the bullets led them to attack the bullets—the only vulnerable point.

JAMES TURNBULL

Grey Town, Natal, September 8

P.S.—There is a rat in Natal which, so far as I can gather, frequently carries its young ones before they are covered with hair; the little things cleave to the teats with mouth and feet. Gilbert White mentions that he once met with such an instance in England. I have not secured a specimen of this rat, though I have seen it once, and once only.—J. T.

Centipedes and Bees

As a postscript to Dr. Hutchinson's letters, I offer the following:—

The centipede does not "bite" at all—it makes tiny incisions with its numerous feet, which in themselves cause trifling inconvenience; but, when alarmed, it drops into each some kind of venom that causes intense inflammation (the *modus operandi* I now forget, but a medical friend explained it very clearly). I once had a centipede's nest in or near my bath-room, no less than eleven of different sizes having been killed there. Our first knowledge of them was derived from an infant child of the female servant, who, having been left on the floor there, was found crying and writhing beyond all soothing. When brought to me the child was feverish and restless, the *left* hand specially hot; on removing the little jacket, the fore-arm was found greatly swelled and inflamed, with two rows, less than half an inch apart, of pricks showing white on the delicate brown flesh. Ipecacuanha and eau de luce soon subdued the pain, but it was days before the child was well again. Several other persons also suffered from them, but only in one case was the line of pricks clearly traceable. Once, stooping to take up a water-pot, I felt a little *froussement* about the thumb; looking down, I perceived a centipede fully four inches long, which deliberately crawled across my hand near the knuckles, causing no pain, but

a most unpleasant titillation, which continued for some time, though I put the hand in cold water immediately. On another occasion, seeing a centipede on the naked foot of one of the women, I called out to her, "Roho mut" (do not stir), and she similarly escaped all serious injury, while an application of warm oil very quickly removed all irritation. Of course it is only when crawling straightforward and undisturbed that the line of pricks can possibly be detected. On disturbance the animal shrinks up, curls round, and brings a number of them into one spot; at least such was the case the only time I ever saw a centipede do mischief; and the same appeared probable on other occasions when I saw merely the after-result.

I remember once, in the jungles of Rohilkund, one of our line of elephants brushed down a bee's nest from an old tree. Some of the nearest men were immediately stung; the servant behind me instantly wrapped me in a shawl I had beside me, then wrapped himself from head to foot in his large Kummerbund, as did all the other men, and off we went at speed to a small river not far off, where the elephants (who had not escaped) plunged themselves to their very backs, as the only mode of getting rid of their little assailants.

I may add that a small black scorpion common in the Dehlie division is very venomous. I have myself seen a case in which its "strike" was nearly fatal to a shepherd of about fifty years of age.

MEMORIA

Bone-Sucking—A Habit of Cattle

THE habit of bone-sucking in cattle (*NATURE*, vol. xx. p. 457) is not peculiar to Natal. The learned Archbishop of Dublin, Dr. Whately, many years since made a most interesting communication to the then existing Dublin Natural History Society on this subject, and stated his observation that animals addicted to bone-sucking invariably fell into an unhealthy state unless the bone was removed from the field. There is a scarcity of limestone, as Mr. Donovan suggests, with us to account for this "bad habit," for such the Archbishop considered it.

Dublin

W. FRAZER

IN response to the letter of Mr. H. C. Donovan (*NATURE*, vol. xx. p. 457), in relation to the habit of cattle in the colony of Natal *chewing bones*, I beg leave to state that many years ago, in a monograph on "Geophagy," I had occasion to put on record a similar habit among the cows in one of the Southern Atlantic States of the United States (*vide Southern Medical and Surgical Journal*, new series, vol. i. pp. 417-444, August, 1845). From this paper I quote (p. 442-443) the following extract bearing upon the question:—

"In confirmation of the importance of inorganic principles in the food, I will here adduce a remarkable fact which has repeatedly fallen under my own observation: The cows which live on the extensive savannas and pine-barrens lying on the north side of the Altamaha River, in McIntosh County, Georgia, subsist upon very coarse species of grasses, which are probably deficient in some of the phosphatic or calcareous ingredients essential to healthy nutrition, for these animals are constantly observed to *chew bones*. They frequently remain stationary for hours, with the head elevated to prevent the saliva from escaping from the mouth; they will, by constant trituration, gradually reduce the bony mass to a very small size, when it is rejected as an unmanageable morsel. The cattle in this section of the state are usually rather lean, and cows brought from the fertile plantations in the neighbourhood, if allowed to subsist on what they can procure in the savannas and pine-barrens in the course of a year or two become equally thin, and ultimately fall into the habit of *eating bones*. I have not been able to ascertain whether these animals indulge in this habit to a *greater extent* when they are in a state of *pregnancy* and when they are giving *milk*, but it appears reasonable that the increased demand for mineral matters under such conditions of the economy would call for a proportionate supply. The intelligent instinct which prompts these animals to seek for a diet so extraordinary must originate in an inadequate supply, in their impoverished aliment, of some of the inorganic principles (probably the phosphatic salts) essential to a proper nourishment of the osseous structures."

Berkeley, California, October 4

JOHN LECONTE

Earthquake in China

THE north of China has been very unfortunate of late. Famine has raged in the provinces of Shantung, Shansi, Shensi, and