

helm" turning great ships, is here outdone. The wheel stands, in all simplicity, between two uprights, or a slitted upright, fixed on the deck (or a raised platform); there is nothing behind or before the outer surfaces of the uprights. But an essential part of ordinary steering-wheels is the drum or axle extending generally a little way behind (and covered, it may be), on which are wound ropes or chains passing round pulleys to the tiller. A more modern form well known is a screw shaft with levers, &c. The omission in question in these cartoons leaves the scientific mind decidedly "at sea," and with little confidence in the steersman. I suspect the artistic type of mind is rather apt to neglect such details.

It is remarkable, indeed, how many matters belonging to simple observation escape notice by artists. I may perhaps be allowed to note a few points which have occurred to me in glancing over *Punch* from November to the present time, and the three books of cartoons of the *Punch* series.

The electric machine sometimes makes its appearance in *Punch*. In No. 53 of the Beaconsfield cartoons, that gentleman (as a professor) is arranging a circuit between an aristocrat and a working man for a shock. The electric machine behind is evidently meant for one of the Ramsden type, but the brass-work with points to collect the electricity is wanting, and the glass plate seems to have great concealing power. Again, the clever and fantastic sketch at the beginning of the Almanack shows an electrical machine of quite indescribable type, unless it be a Holtz, but it defies all mechanical conception. Perhaps it is not allowable to apply scientific rules to the brilliant insanity of such drawings, but I think there should be more basis of real existence than this one presents.

From many pictures we might be led to infer that left-handedness is much more common than it really is. Thus, a *pince-nez* is held in the left hand by Mr. Bright (in No. 19 of the Bright cartoons), by a church dignitary speaking to his daughters (*Punch*, December 21, p. 282), and by an old gentleman who receives a letter on the road on a snowy day (*Punch*, February 1, p. 39). In the Almanack (p. 5) a workman holds a cup in his left hand and a saucer in his right. Reins are frequently held in the right hand (which, I understand, is wrong)—one example is the cartoon of *Punch*, December 14, "Post Equitem." If something might be said for these cases, it is difficult to see how an artist can be justified in putting a quill pen behind the left ear, as in the case of Gladstone, when meeting Bismarck (last of Gladstone series), unless, indeed, the right ear were already occupied with one (which is not here the case). A similar remark seems applicable to a caricature of Ruskin by Sambourne (*Punch*, December 7, p. 254).

In an ingenious sketch (*Punch*, February 1, p. 37), in which a complex pocket-knife or sort of *multum in parvo* is made to take the aspect of a formidable animal, the spiral of the corkscrew turns the wrong way.

In one of the Bright cartoons (No. 33), that gentleman appears in court costume before a mirror which slants away from him upwards, but the image, I think, hardly corresponds to this.

One word more, and of a somewhat different order of criticism. Heat of certain intensities and in certain circumstances may, of course, be very unpleasant. But, as we have had good reason to know lately, heat may be very welcome and agreeable. Therefore I venture to indict the cartoon of *Punch*, February 15, "Hot water, sir!" as flagrantly at fault. Beaconsfield is bringing in the morning's hot water to John Bull in bed. In the session of 1879 John Bull may very likely find himself "in hot water;" but in the connection to which the picture refers, hot water is a pleasant mitigation to the inevitable discomfort of washing. So John Bull's horrified look could not possibly refer to that. If he were being awoke, as I have been, in a hydro-pathic establishment, about 6 A.M., by a fiend in human shape, who showed a cynical determination to pack him in a cold wet sheet, the man's implements might arouse some horror. In the Beaconsfield cartoon, No. 90, "The Turkish Bath," the metaphor is, of course, all right: "You made it so confoundedly hot for me!"

Some of the foregoing are little points, but they prove this much, that there is room for improvement among artists of this class as regards correctness of observation and strict fidelity to fact.

A. B. M.

Intellect in Brutes

IN Mr. Nicols' instance of intellect in brutes (*NATURE*, vol. xix. p. 365) he tells us that a plumber "had on several occasions

been called in to examine into the cause of leakage of water-pipes under the flooring of houses," and then records a *single instance* of rats having knawed through a pipe. It is important to know whether the plumber knew of another case: for the idea at once suggests itself that the pipe had cracked through frost, and the rats then discovering the leakage gnawed it to get more water.

It has always seemed to me that brute reasoning is always *practical* but never *abstract*. They do wonderful things suggested by the objective fact before them; but, I think, never go beyond it. Thus, a dog left in a room alone rang the bell to fetch the servant. Had not the dog been taught to ring the bell (which on inquiry proved to have been the case) it would have been abstract reasoning, but it was only practical. The Arctic fox—too wary to be shot like the first who took a bait tied to a string, which was attached to the trigger of a gun—would dive under the snow and so pull the bait down below the line of fire. This is purely practical reasoning; but had the fox pulled the string first out of the line of fire *in order* to discharge the gun, and then to get the bait, that would have been abstract reasoning which he could not attain to.

This practical reasoning is just what young people do, before they can reflect. A boy the other day found the straps of his skates frozen. The fact only suggested *cutting* them. Not one of his schoolfellows reflected upon the abstract fact that the ice would melt if he sat upon his foot a few minutes. Hence brutes and boys are just alike, in that nothing occurs to either beyond what the *immediate* fact before them may suggest. The one kind I call purely *practical* reasoning, which both have; the other, *abstract*, which brutes never acquire; but the boy *will* as his intelligence develops.

GEORGE HENSLOW

IN Central Park one very hot day my attention was drawn to the conduct of an elephant which had been placed in an inclosure in the open air.

On the ground was a large heap of newly-mown grass, which the sagacious animal was taking up by the trunkfull, and laying carefully upon his sun-heated back. He continued the operation until his back was *completely thatched*, when he remained quiet, apparently enjoying the result of his ingenuity.

It seems to me that *instinct* should have prompted the elephant to eat the grass, and that it was *reason* which caused him to use it for the purpose of diminishing the effect of the sun's rays.

New York, February 8

JAMES J. FURNISS

Bees' Stings

WILL you allow me, as possessor of a couple of score of hives, to say a word respecting the discussion in your columns as to the effect on *Apis mellifica* of the loss of its sting and appendages.

As far as my observations go, the bee is not seriously injured by the loss, for though imprisoned and watched for some hours, as soon as released it flies back to its hive, and apparently resumes its work as before. However, any one sufficiently painstaking can settle the question finally by marking some such bees, and watching for their departure, and return laden with honey or pollen.

May I ask if any of your readers have yet determined the identity of bee poison and formic acid. The former is said, on exposure to the air, to solidify to a white crystalline mass, but formic acid requires, I believe, a temperature of 0° C. to effect this modification.

J. P. JACKSON

Bull's Mill Apiary, Hertford, February 18

P. LE NEVE FOSTER

A VERY numerous body of friends will have heard with regret of the sudden death of Mr. Le Neve Foster, the secretary of the Society of Arts. Though not himself an original worker in science, there were few men better known in scientific circles, or so universally liked where he was known, as Mr. Foster. His connection with the Society of Arts threw him amongst men working in nearly all lines of research, and there are probably few recent instances of the practical application of any new scientific discovery to industrial purposes in which he did not take some interest. Coming up to London with a fellowship from Trinity Hall, he was called to the bar in 1836, and practised for some fifteen or sixteen years