ANIMAL TEACHING.

(From Land and Water.)

After eighteen centuries of a progressive civilisation, it seems strange that such little advance has yet been made in the domestication of birds, beasts, and fishes. Dogs, deer, buffaloes, camels, elephants, horses, and several other kindred species, have been long domesticated and taught to perform certain services for their masters and owner, but the education of the animal, the bird, and the fish, as auxiliaries in man's service, has not yet rightly begun. Every creature, from mammoth to mollusca, from a boa constrictor to an earth-worm or an insect, possesses a power capable of being utilised, and, when directed by a wise and diligent training and teaching, each and all can be made more serviceable in the scale of nature and art. What would man be without training and teaching? He would be an animal less serviceable to his species than the most ungainly quadruped that moves instinctively on all fours. A time must come, one day, if this world continues, when many wild and undomesticated creatures will become extinct, and when their reproduction will become impossible to man. Some whose hides, or feathers, or horns, or tusks, or other outer coverings, or inner contents, form articles of trade and merchandise, will, unless we begin and reverse the order of things, pass away, and be seen no more, save in museums. Let us think over this suggestive matter, and see if it is not possible to domesticate and teach certain useful members of the bird, beast, and fowl creation, and preserve their species for all time.

We have all witnessed, in our time, the astonishing performances of certain animals, birds, and fishes, which were trained for the purpose of exhibition; but the majority of these, though they served to prove the possibility of a higher training, and a more useful one, yet in themselves they exhibited a lamentable amount of waste labour and waste power.

Long years before the American Rarey's name was heard as a "horse-tamer," a secret existed, as a family heirloom, among a sect of the O'Sullivans in the south of Ireland. This family was known as "The Whisperers," and they possessed the power of rendering as quiet as a lamb the most stubborn and unmanageable horse that ever existed. Whether they did anything more to a horse than breathe into his nostrils we know not, but by doing this, and by kind soothing, and other ways known to themselves, they effected their purpose and retained their fame. Putting the question of drugs, or stimulants, or other fascinating means aside, and coming to the point of pure and unadulterated domestication and teaching, perhaps there was no person in modern times achieved so much success in animal teaching as S. Bisset. This man was a humble shoemaker. He was born in Perth, in Scotland, in 1721, but he afterwards removed to London, where he married a woman who brought him some property. Then, turning a broker, he accumulated money until the year 1759, when his attention was turned to the training and teaching of animals, birds, and fishes. He was led to this new study on reading an account of a remarkable horse shown at a fair at St. Germains.

Bisset bought a horse and dog, and succeeded beyond his expectations in teaching them to perform various feats. He next purchased two monkeys, which he taught to dance and tumble on a rope, and one would hold a candle in one paw and turn the barrel-organ with the other, while his companion danced. He next taught three cats to do many wonderful things, to sit before music-books, and to squall notes pitched to different keys. He advertised a "Cat's Opera" in the Haymarket, and successfully carried out his programme, the cats accurately fulfilling all their parts. He pocketed some thousands by these performances. He next taught a leveret, and then several species of birds to spell the name of any person in the company, and to distinguish the hour of the day or night. Six turkey cocks were next rendered amenable to a country dance, and, after six months' teaching, he trained a turtle to fetch and carry like a dog, and, having chalked the floor and blackened its claws, he made it trace out the name of any given person in the company.

Bissett was equally successful in teaching goldfinches.

After some reverses we find Bissett in Dublin about 1775, showing his different animals; and, again, on making some money, he purchased a public-house in Belfast, determining to give up animal-taming. Growing restless, his old taste returns, and he takes to training and teaching animals once more. He began with a dog and cat, and, perfecting these in their lessons, he selects the most obstinate of the brute creation, an Irish pig, to experiment upon. The teaching of this unruly animal almost wearied out Bisset's patience, and he was about giving up the task in despair when he bethought him of a new mode of taming the young boar. After sixteen months of unwearied perseverance, he at last was rewarded by instilling a little reason into the pig's unreasoning cranium, thus proving that pigs can not only "see the wind," by common belief, but that they can be made useful in "raising the wind." During the teaching of his pig Bisset used to keep young piggy under his shoemaker's seat while he worked.

In 1783 Bisset brought his "Learned Pig" into Dublin, procured the leave of the Lord Mayor for his exhibition, and carried the city by storm. It was trained to be as docile and as obedient as a spaniel, and was taught to spell names, cast up accounts, tell exactly the hours, minutes, and seconds, to kneel and make his obeisance to the company, and do various other feats. Some petty officer, half armed with authority, broke into Bisset's room, assaulted the unoffending poor exhibitor, broke and destroyed everything, and drew his sword to kill the wondrous animal. Poor Bisset pleaded hard for the chief magistrate's leave, but he was threatened that if he offended any more with his daring performances he would be dragged to prison. Only it was a little too late in the era, it is probable poor Bisset would have suffered at the stake for witchcraft.

After the break-up of Bisset's hopes, his anguish of mind produced an illness from which he never effectually recovered, and he died a few days afterwards of a broken heart, in Chester, on his way to London.

Now, although Bisset's power of training and teaching animals, birds, and fishes, was most remarkable, yet it was not of a practically serviceable kind in the interest of humanity. We bring forward his case, as an illustration in point, to show that the same patience and perseverance, if directed otherwise, could be made to produce the most beneficial results. We wish to see all the living species existing preserved and utilised for useful and serviceable purposes. There are many animals, as well as horses and camels, etc., whose power can be turned to advantage in useful labour, if properly domesticated and trained, and many of these in their wild state, instead of existing as a nuisance upon the earth, can be made a blessing as auxiliaries to human labour and for human food. Whence arises the different species of dogs, and the set purposes for which they are trained? some for very questionable purposes at the present day. Cannot their usefulness in future be augmented? Is a carrier pigeon to always exist as our only feathered messenger? Are all our fishes in the ocean, and in our rivers, to exist for sport and food alone? Can we not harness them to some suitable service in scientific development in the deep, and in extending our knowledge of causes and currents in accessible places? Cannot we train or induce fishes to pay our shores visits at regular intervals, instead of being dependent on laws of chance? Is the feathered creation to remain for ever chary and affrighted of man? The bee gives us honey, the worm gives us silk, the cow gives us milk, butter, and food, the horse labours for us, the sheep clothes us, the fowl gives us bedding, yet we fall asleep in the arms of nature, contented to sleep, and wake, and work away in the old sing-song style.

Let us pause for a moment. Are we or are we not hunting creation to death? stamping out, burning out, rooting out with bullet, dirk, and dagger, the work of God? without the least pause in our operations, without the least provision for our future supply. If we are not doing so with a vengeance, we have not read the signs of the times aright, or we have travelled this world in vain. Although it is too late to restore many things that are now irrecoverably lost to us in the animal creation, it is not too late to mend our ways, and exert our knowledge for useful purposes on land and water.

SCIENTIFIC.

A correspondent of the *Journal of Agriculture* states that the leaves of the common basket willow (*salix nigra*, Marshall,) make an excellent yeast, if treated in the same way as is usual with hops. "The discovery," he says, "was made in my family last summer, and, after a thorough trial, I was convinced that nothing is equal to it, as it rises much quicker than hops—in half the time—imparts none of the hop flavour so disagreeable to some; and, in fact, makes better bread every way. The thing is well worthy the attention of every good housewife; and, lest some should hesitate in consequence of not knowing the medical properties of the willow in question, I will add that it is a healthful tonic, from which no harm can possibly arise.

COLOUR OF THE SKY.—The following is from Mr. Glaisher's "Travels in the Air,"—just published by Bentley, London:—"The azure colour of the sky, though resembling the blue of the first order when the sky is viewed from the earth's surface, becomes an exceedingly deep Prussian blue as we ascend, and, when viewed from the height of six or seven miles, is a deep blue of the second or third order. 2. The maximum polarising angle of the atmosphere, 45°, is the same as that of air, and not of water, which is 53°. 3. At the greatest point to which I have ascended, namely, at the height of five, six, and seven miles, where the blue is the brightest, the air is almost deprived of moisture. Hence it follows that the exceedingly deep Prussian blue cannot be produced by vesicles of water, but must be caused by reflection from the air, whose polarising angle is 45°. The faint blue which the sky exhibits at the earth's surface is therefore not the blue of the first order, but merely the blue of the second or third order rendered paler by the light reflected from the aqueous vapour in the lower regions of the atmosphere."

Desbarolles, the great chiromaneist, is in London, and more than ever convinced that the science he possesses is one of the "exact" ones. Desbarolles is the first professor of palmistry, which has never been admitted by scientific men as worthy of a moment's consideration. They leave it to the gipsies and fortune-tellers, and then punish them for practising it. Desbarolles, however, by dint of long study, succeeds in proving that the lines of the hand are connected with the brain, formed at the same moment, and acted upon and modified according to the diminution or exaggeration of the passions. He calls the attention of the London physicians to this science, and invites the strictest investigation on their part of his method of judging the character and determining, according to the antecedents of the individual, the future impressions to be experienced, and the consequent future influences to which the consultant will be subjected. The police authorities of Paris were so fully aware of the certainty of M. Desbarolles' calculations, that for a long time past he had been invariably sent for to examine the hand of every great criminal, considering themselves much benefited by the light he was enabled to throw, not upon the actual guilt of the suspected culprit, but upon the means he would have employed in the accomplishment of the crime had he been tempted to its commission. The assassins Lemaire and Philippe were both submitted to the ordeal, and in both cases were Desbarolles' previsions justified, while his *compte rendu* of Troppmann's hand, with the peculiar thumb, was pronounced to be one of the most valuable indications of the motive of the crime, and the means by which it was perpetrated.

AMPUTATION OF LIMBS.—*Galignani* says:—In a paper addressed to the Academy of Science, Dr. Sedillot, of Lyons, calls attention to the question of mutilation caused by fire-arms. Having in the course of the late war observed upward of 1,500 cases, and performed as many as fifteen amputations in a single day, his opinion cannot but be of great value. The best rule, in his opinion, is to operate before the inflammatory period has set in, and therefore on the second or third day, at the least, after the infliction of the wound. Amputations performed during the inflammatory period often end in death, but are yet far from being so mortal as the system of temporizing, which does not save one patient in twenty, owing to the gangrene, hemorrhage, and purulent infection, which are but too frequently the consequence. On the other hand, the projectiles now in use cause such fearful ravages and expose to such extensive suppuration, that the following rules should be observed:—1. To reduce the wound to the smallest diameter; 2. To favour a free exit of pus; 3. To adopt a radical reform in the method of amputation; instead of enclosing the osseous extremities within the flesh, they ought to be left sticking out. On this latter point Dr. Sedillot is very particular. If the stumps be cut hollow, the bone will tend to irritate, ulcerate, and mortify the parts in contact; it will impede the removal of the patient, require repeated dressing, prevent the outflow of the pus, and render it difficult to seek out the vessels causing hemorrhage.

The International Exhibition of this year has two great merits—one, that it is resplendent in pictures and in statuary; another, that it offers a combined display of the modern porcelain productions of all countries. This last feature we greatly extol, for it gives us a collection quite exceptional and unique in its completeness and its extent. Those who fail to mark and make thoughtful note of this gallery will miss not only an artistic and intellectual treat, but also a useful consideration of the comparative condition and powers of this and other countries in a branch of manufacture most intimately wedded to art. This consideration is surely one worthful to all, to that high circle that leads a nation's aims, to the philosophical watcher, and to those who have a direct pecuniary interest in the result and a personal connection with the trade. We find that England has every reason to be pleased with the result, for she may claim a general and an individual superiority in most, if not all, the branches of this art manufacture. The scale ascends in a distinct and clear manner from nation to nation, to that commanding and superior altitude whereon we find England placed. Not that we deny in the slightest that many lands have distinguished and exceptional branches in which their merit is incontestable, but it is for the English display as a whole (take it either for its applicability to useful purposes or for its merely decorative and purely art productions) that we claim pre-eminence. We do not deny, for instance, that the Royal works of Berlin have sent masterpieces in white bisque. The little collection is perfect from a sculptural point of view. The figures are true in outline and proportion, strikingly artistic in attitude of figures either isolated or combined, and we might fancy that they were miniatures in just degrees of proportion of some of the finest works of Thorwaldsen. The large vase is an exceptional production, but on the other hand we doubt if porcelain is in its legitimate sphere of art work when it produces busts life-size, excellent though they may be. That of the Prince of Prussia is very striking and worthy of marble, and of the finest touch of finish which the sculptor's chisel would have given, and porcelain could not. The Swedish vase, with raised flowers in bisque, is exquisite, graceful in form, and wonderful in the minuteness of the manipulation. The Dresden work was always heavy and awkward, and we see to-day the style of the past reproduced without much progress in the manufacture. The Danish porcelain has the old classic antiquity of style, which gives it a cabinet value. There are some very graceful specimens, and the colour, a ground of dove hue, in one instance, that of a small chocolate service, is remarkably beautiful. The Portuguese and the Spanish offerings show little advance, and date, in style of taste or lack of it, a century back. In Japanese and Chinese specimens—principally of bowls—we can ask for no more than the old productions, but we look to Europe to advance. France is for the nonce stagnant, but we doubt if she would come up to the pitch of excellence of England had the times permitted her to enter fully into the list as a competitor.—*Court Journal.*

MECHANICAL HINTS.

TO MAKE A SUPERIOR SAND PAPER.—Take a quantity of broken window glass (that which has rather a green appearance on the edge is best); pound it in an iron mortar; then have two or three sieves, of different degrees of fineness, ready for use when wanted. Take any good tough paper (fine cartridge is the best); level the knobs and lumps on both sides with pumice-stone; tack it at each corner on a board, and, with good clear glue, diluted with about one-third more water than is used generally for wood work, go quickly over the paper, taking care to spread it even with your brush; then, having your sieve ready, sift the pounded glass over it lightly, yet so as to cover it in every part; let it remain till the glue is set, take it from the board, shake off the superfluous glass into the sieve, and hang it in the shade to dry. In two or three days it will be fit for use.

TO CLEAN SOFT MAHOGANY, OR OTHER POROUS WOOD.—After scraping and sand-papering in the usual manner, take a sponge and wet the surface to raise the grain; then with a piece of fine pumice-stone, cut the way of the fibres, rub the wood in the direction of the grain, keeping it moist with water. Let the work dry; then, if you wet it again, you will find the grain much smoother, and it will not raise so much. Repeat the process, and you will find the surface perfectly smooth, and the wood much hardened. By this means, common soft Honduras mahogany will take a polish equal to fine Hispaniola.

ANOTHER WAY TO CLEAN AND FINISH MAHOGANY WOOD.—Scrape and sand-paper your work as smooth as possible; go over every part with a brush dipped in furniture oil, and let it remain all night; have ready the powder of the finest red brick, which tie up in a cotton stocking and siftly equally over the work the next morning, and, with a leaden or iron weight in a piece of carpet, rub your work well the way of the grain, backwards and forwards, till it has a good gloss. If not sufficient, or if the grain appears any way rough, repeat the process. Be careful not to put too much of the brickdust, as it should not be rubbed dry, but rather as a paste upon the cloth. When the surface is perfectly smooth, clean your work off with a rubber of carpet, and fine mahogany sawdust. This process will give a good gloss and face to your work, and make a surface that will improve by wear. Indeed, by this process, soft Honduras mahogany will have the appearance of Spanish.

A frightful accident occurred a fortnight since at Trent, in the Tyrol. A grand bear hunt had been organised, during which the bear flew upon a hunter named Messne, and literally tore away his lower jaw and his tongue. The other hunters succeeded in killing the ferocious animal, which was an enormous size, and weighed 280lb. Messne's wound was a shocking sight. The unfortunate man did not die at once, and was fed by means of a tube introduced into the œsophagus, but it was expected that death would very shortly ensue.

EXTRAORDINAY POSITION FOR BIRDS' NESTS.—A white-throated wren recently built its nest in the letter-box of the Duke of Rutland's game-keeper at Links, near Newmarket, and produced six young ones. During its incubation the old bird took no notice of the intrusion of the persons who went for the letters night and morning. A short distance off this remarkable nest is one built by a lark under the metals on the line of railway between Newmarket and Dullingham. The bird is sitting upon four eggs, and takes no notice of the thirty trains which pass over the line daily.