5th.—That a two-drachm dose of tincture of hyoscyamus is not quite equivalent to thirty grains of chloral. Two-and-a-half drachms would probably be as nearly an equivalent as could be given. From the different sedative and soporific power of bromide of potassium, I think one can hardly form an idea of an equivalent dose. It appears to me to be useful only where the excitement or insomnia is of a slight character.

Mental Epidemics among the Lower Animals. By W. Lauder Lindsay, M.D., F.R.S.E., Physician to the Murray Royal Institution (for the Insane), Perth.

In supplement of my paper on "The *Physiology** of Mind in the Lower Animals," and in anticipation of the correlative essay, which I hope by-and-bye to contribute to the "Journal of Mental Science," on "The *Pathology*† of Mind in the Lower Animals," I am desirous—so long as the whole British public has a vivid memory of certain signal illustrations of the fact, or phenomena—to direct attention to the circumstance that the lower animals, in common with man, are subject to certain forms of *Epidemic Mental Derangement.* I allude more especially, at present, to that form thereof which is popularly known as *Panic*, and technically described as *Timoria* or *Panphobia;* an affection that is very properly included among "Epidemic Mental Diseases" in the short account given of them by Dr. Browne, ex-Commissioner in Lunacy for Scotland, in "Chambers's Encyclopædia" (vol. iv, 1862, p. 92).‡ The illustrations to which I would specially draw attention, in the case of the lower animals, are to be found, on the one hand, in the notorious *Stampedes*§ *of Cavalry Horses*, which character-

* "Journal of Mental Science," April, 1871.

† The whole subject of both "The *Physiology and Pathology* of Mind in the Lower Animals," has been *outlined* by the author in a pamphlet bearing that title, published in Edinburgh in May, 1871.

‡ He there cites, as illustrative examples, the *Panics* of the year 1845, and the descriptions given of them in the "Edinburgh Review" for 1849.

§ *Stampede* is apparently a Mexican (Spanish) word. Miss Isabella Saxon, in her "Five Years within the Golden Gate" (California), describes the following incident as occurring near Council Bluffs, on the overland route from Chicago to San Francisco, 1868 (p. 280):—"We had here what the travellers call a *Stampedo;* or the bullocks unharnessed taking flight and scampering off in all directions, often knocking down or trampling upon all in their way. It required much trouble on these occasions, and even considerable *danger*, to recover them."

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ized the well-known "autumn manœuvres" at Aldershot, about the end of August and beginning of September, 1871, as well as the later military manœuvres near the Russian capital (in September, 1871); and on the other hand, the *Stampedes of other domestic and wild animals*, during the more recent devastating conflagrations of Chicago, and of the prairies or forests of Michigan and Wisconsin, (in October, 1871.)

Besides illustrating the phenomena of *Panic* among the lower animals, and its similarity to that which frequently occurs in man, such "stampedes" furnish admirable examples of various prominent and valuable *mental endowments* of these animals; acquirements or powers which have been already described or touched upon in my previous paper, but which cannot be too frequently or fully illustrated or demonstrated so long as popular opinion in reference to their mental attainments may be held to be represented by such a prejudiced expression of belief as that contained in the criticism on Darwin's "Descent of Man" in the "Quarterly Review" for July last. Moreover, it is advisable to cite the most *recent* examples or illustrations—those which most easily admit of *authentication;* because authors, who hold that *other* animals are separated from man by a different *kind* of mind, or by the absence of all mind in the former, take objection to telling anecdotes that teach lessons *opposed* to their prejudiced views, on the ground that such illustrations are apocryphal, and unworthy of serious or implicit belief. Now the newspaper accounts of the *English* stampedes, to which I have referred, may not be accurate in *all* their details; but they are probably sufficiently so for practical or present purposes. The panics in question were the subject of description, at the time of their occurrence, by the "special correspondents" of the leading newspapers of the metropolis—men whose experience renders them eminently capable of accurate observation, and of faithful narrative—whose reports, had they been erroneous, would have met with angry criticism or immediate denial at the hands of sensitive military authorities. The same remarks apply—though not in equal degree—to the *Russian* stampede, which was described by the "Times" correspondent, writing from the spot; and it need not be here explained that the "Times" does not employ as its correspondents men who are not skilled observers in or reporters on the various subjects on which they write with such signal attractiveness and fidelity to fact. The "special correspondents" of the New York newspapers are perhaps

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more given to what is known as "sensational" writing than are their brethren of the press in London; in other words, they clothe their *facts* in a more highly figurative language. But they are not inferior to their London representatives in the keenness of their observative powers, nor in the fidelity of their records. Their statements regarding the great fire of Chicago, and the prairie or bush fires of Michigan and Wisconsin, have moreover been amply confirmed by the reports of the special correspondents of *our own* newspapers;* and, what is quite as important testimony to their truthfulness, the very various reports of very different writers agree—in their main features—as to the essential or fundamental *facts*. And lastly, the incidents described, alike in England, Russia, and the United States, are of so *recent* occurrence that the veracity and fidelity of the reports in question admit of *easy authentication*. I need, therefore, I think, offer no apology for placing upon record here a brief narrative of these most recent and at present well-remembered "stampedes" of the horse and other animals; appending a commentary, setting forth the parallelisms to similar "panics" in man, and the interesting illustrations such animal panics afford of certain mental traits of the lower animals.

I. *Stampedes of Cavalry Horses—traceable to Alarm or Fright.*

A. The Aldershot Stampedes.

The three stampedes at Aldershot respectively occurred on Monday, Aug. 30; Saturday, Sept. 2; and Sunday, Sept. 3, 1871; all at night, the horses belonging to three different regiments.

The *first* stampede happened among the horses of the 1st Life Guards, encamped on Cove Common near Aldershot for the purpose of taking part in the so-called "Autumn Manœuvres" of our Volunteer Forces. It formed the subject of narrative and comment in all the newspapers of the three kingdoms about the beginning of Sept. 1871. It was also the subject of a plate and relative narrative in the "Graphic," of September 16, 1871. The "Times" gave the following account of the details:—

Three hundred horses have been put in danger of life and limb; . . .

* The correspondent of the "Scotsman" (Oct. 27, 1871), writes as regards the *American* descriptions of the Chicago fire—"As to *exaggerations*....there were *none*. There *could be* none: not one-tenth of the story has been told, and he doubted if ever it would be....Who will ever hear the *true* tale of this dire calamity?"

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a large number of them have been irretrievably lamed, others drowned, others staked, and others so crippled that they must be *shot;* . . . . and altogether a loss, which may be moderately estimated at £2000, has been suffered by the nation. . . . . Who could have thought that horses would go *mad*, like Goldsmith's dog, to gain some "private end" of their own? and yet what *other* conclusion can we form from the story? . . . . a sedate and virtuous body of 300 horses suddenly going *mad*, running over one another, kicking and fighting among themselves, and committing *suicide* by all the means in their power, because they were disturbed by an ill-bred cur or a flock of geese! . . . The 300 horses, which had been feeding like one, became *frenzied* with the same unity of purpose. They started back from their pickets, rearing and snorting, and some gave way. Where they did not, the horses rushed forwards again, cannoning against one another, and the rocking pull on the cords brought up more pins, and those which were still tethered became more *frantic*, until, *in a moment* or two, the whole 300 broke loose. . . . . The 300, directed by as much intelligent discrimination as the 600 who charged the Russian guns at Balaclava, started off on an equally fatal course.

The "Daily Telegraph," of September 1, 1871, ascribed the origin of the panic to the quarreling of two dogs in the camp. The smaller one, being bitten by the larger, Setting up a hideous yell, ran towards the horses. The sudden noise *frightened* the horses of two officers, and caused them to start from their pickets, followed by six troop horses. A *panic* then seized the whole line; the 300 broke loose *simultaneously*, running in all directions, some dragging the cords and pins, and all wearing their saddle-cloths. . . . . Almost every open route had been taken by the fugitives . . . . . At one point the troop dashed against the closed toll-gate, and smashed it to pieces, while . . . . many plunged against stakes, or other obstructions, seriously injuring themselves. Several dropped down dead within an hour; some were drowned in the canal, and others were captured in a crippled state.

The "Standard" wrote—

It has been found necessary to *destroy* ten or twelve of these valuable animals, owing to the injuries sustained in their *mad* career. About twenty have been lamed and otherwise rendered unfit for service. Several are still missing; and most of those which have been brought back to camp are on the sick list. . . . . During their stampede, they plunged against stakes or other obstructions, which penetrated their breasts, and otherwise inflicted serious injury. Several horses dropped dead within an hour. . . . . In addition to the horses already dead or crippled, many others will have to be sold as unfit for service.

The "Edinburgh Evening Courant," of September 1, 1871, narrates that the horses "took *fright*, and broke loose. They

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galloped off in all directions, and passed through Farnham, Farnborough, and Framley. About 20 galloped into the encampment of the 1st Battalion of the Rifle Brigade, where they came in contact with a cab, which they knocked over, and greatly injured the proprietor." Next morning it was found "that about ten were killed and 26 missing,—many others being wounded."

The *second* stampede, which occurred to 80 horses of the 2nd Dragoon Guards, also encamped on Cove Common, is the subject of a plate and of sundry comments in the "Illustrated London News" (of September 16, 1871. Pp. 256 and 262).

According to the "Daily News" of September 4, 1871—

> Seventy-six horses suddenly broke loose from the right wing of the regiment, and galloped *madly* in all directions. The vast expanse of common ground in the locality is intersected by the Basingstoke canal and numerous ditches, into which many of the animals plunged, or fell, and were rescued with difficulty from drowning or suffocation. . . . . A charger belonging to Captain Greatorex had an eye cut out; while another broke its leg so severely that the bone protruded through the skin, and it was obliged to be *shot*. . . . . Four were so seriously injured that it was feared they would have to be *shot*, and others were badly lacerated in various places.

The "Daily Telegraph" of same date, also states—"Several of them received injuries which necessitated their being *shot*."

The *third* stampede—according to the "Globe," of September 6, 1871—occurred in the same camp to the horses of the 10th Hussars—on a smaller scale, however, than the others—only 40 horses being engaged in it.

The *immediate or exciting cause* of the panic in all these stampedes appears to have been some very trivial incident—in itself utterly disproportionate to the effect produced. Some say the first stampede was caused by a flock of geese "that disturbed the repose of the chargers;" the second was attributed to "a runaway horse from an adjacent camp." "The horses were startled either by a flock of geese or by some dogs quarreling . . . a sudden panic being produced," says the "Graphic" (September 16, 1871). "It is always one or two horses which begin the mischief; and if *they* were quieted at once the *contagion of panic* would be arrested," remarks the special correspondent of the "Scotsman" (Sept. 6, 1871).

Such facts illustrate the extreme *nervous sensibility, excitability, or irritability** of artificially-reared horses; their

* Using these terms here in their strictly *scientific* sense.

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capability of being very easily *startled or frightened.* These aptitudes must be considered, however, in connection with the *remote or predisposing causes* of such panics, which are to be found in the *artificiality* and *luxury* of their mode of life, and in the whole character of their training and occupation.* The life of the English cavalry horse is an eminently luxurious and lazy one; the animal is utterly unaccustomed to the sounds and sights of country or of camp routine. Luxurious life is as destructive of nervous vigour or tone in the lower animals as in man. Commenting on the first stampede, the "Daily Telegraph" (of September 2, 1871) says—

> It was one of Lord Macaulay's favourite paradoxes that *hyper-civilisation* tends rapidly to worse barbarism than that of nature; and he especially insisted on the deteriorating and corrupting influence of *city* life upon the brute creation. The horse, for instance, which is free from vice in his wild state, and which, when but one stage removed from nature, rapidly becomes the trusting *friend* of his Arab master, is too often converted by civilisation into a shifty, tricky, and sometimes into an *incurably vicious*, animal.
>
> Sir Charles Napier often told us that we, Englishmen, did not understand how to domesticate the horse. He is an infinitely more intelligent companion to man than we give him credit for being. Our American kinsmen understand and manage him better than we do. Nothing is more common than to see an American horse left standing by his master in the midst of Broadway, alone and untied; and all the noise and traffic of one of the most crowded thoroughfares in the world will not "scare" him, or make him budge till his owner comes to claim him. . . . . Horses may be *made* to understand, and sympathise with, the wishes and occupations of their masters; and Professor Rarey only carried to its ideal perfection a lesson that may be learned from many an intelligent student of the stable in every class of English life. We may enforce what might be called "the conscious *sense of discipline*" in the horse, and render it "too sagacious to be scared by a sudden noise!"

The same newspaper (of April 12, 1871) remarks, also, that "horses, though docile and gentle, are *timid and nervous.* Noise and violence will only aggravate their *terror* if once aroused; but they can be soothed if a man has the sense and temper to go about his task in the right way."

* See what I have said on nervous sensibility in the horse and dog, as the result of high breeding, in my pamphlet on "The Physiology and Pathology of Mind in the Lower Animals" (p. 13 and 14); as well as in my paper on "Insanity in the Lower Animals" (reprinted from the "British and Foreign Medico-Chirurgical Review" for July, 1871, p. 11).

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Commenting on the Aldershot stampedes, the "Times" writes—

> Horses are strangely *nervous* creatures. If a stable take fire it is almost impossible to get the poor beasts to move out of it, though they *scream* in the *agony of their terror;* and if a number of horses are seized with a *panic*, they become quite *mad* for the time. Some of those which first ran away were found stupidly swimming round and round in a tank. Others dashed their heads so violently against the bank of a ditch that their spines were literally driven backwards.

The special correspondent of the "Scotsman" (September 6, 1871), writing from Aldershot of the several stampedes, says—"All the horses are ridiculously over-fed, and in much too good condition for *real* work."

The *English* stampedes attracted general notice from the circumstances under which they occurred. The manœuvres, with which they were connected, formed an experiment of national importance, to which the attention of all classes of people was specially directed; and the various camps contained representatives—in the form of "special correspondents"—of all the leading newspapers in the three kingdoms, whose object it was to record *pro bono publico* all the incidents and accidents of the experiment. There is, however, no *novelty* in the sudden seizure with *panic* of a body of horse.* Cases of other "stampedes" in cavalry horses, in the Crimean and other wars, were given by a Military Veterinary Surgeon in the "Scotsman" (in September, 1871), showing that such *panics* are by no means uncommon among trained bodies of horse.

B. The St. Petersburg Stampede.

That the *English* stampedes are not singular instances of panics among cavalry horses is proved by the fact that a more remarkable illustration, on a much larger scale, occurred even more recently (in October, 1871) in Russia—in the course of a similar series of autumnal manœuvres near St. Petersburg. Describing these recent military manœuvres in the neighbourhood of St. Petersburg, the "Times" correspondent writes (says the "Edinburgh Daily Review," of October 17, 1871)

> On the second night of the campaign an unlucky accident occurred. . . . . A regiment of the Empress' Cuirassiers of the Guard,

* The "North British Agriculturist," of October 18, 1871, contains an article on "*Panics* amongst Horses."

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900 strong, ... had arrived at their cantonments . . . . A neighbouring regiment, which had arrived long before, and had dined, indulged in some *boisterous mirth;* whereupon the squadron of horses nearest to them became *alarmed*, broke away, was followed by the next squadron, and a *panic* seizing them all, *in one instant* the whole 900 fled in wild disorder, and in the utmost *terror*, over the open country. Two things were very remarkable in this stampede. In the first place, exactly as all wild horses do in the Steppes—and from which Steppes many of these had come—and exactly as camels do before they start in the desert, they unanimously selected one large powerful horse as their *leader;** and with a look at him and a snort at him, which they meant and he understood as *après vous*, they actually waited till he dashed to the front, and then followed in wild confusion. When I tell you that some of these horses were not recovered till they had gone 120 miles into Finland, you may imagine what the *panic* was. . . . Some of the more *young* and adventurous *mad-caps* did not stop, or were not caught, till they had run about 100 miles. Some were staked, and some were lamed, and some were obliged to be *shot.*

A curious circumstance happened in the middle of the stampede, illustrating the wonderful power of *habit and discipline* in the conduct of the horse, even when panic-struck—

The second remarkable thing is the way that some of them were stopped. In *one solid mass* they dashed on for miles, and then came directly, at right angles, on a river. In front of them was a bridge, but on the other side of the bridge was a sort of *tête du pont*, and a small picket of cavalry. The horse which *led* would not face the bridge, seeing the cavalry at the other end; but turned on one side, dashed into the stream, and the whole 900 horses swam the river *together.* As they emerged and flew wildly on, the commander of the picket bethought him of a *ruse*, and ordered a bugler to blow the *appel.* This is always blown when the horses are going to be *fed* . . . *All* the *old* horses pricked their ears, *wavered*, stopped, *paused*, turned round, and trotted back!† This severed the mass. . . . The rest were broken up. 300 ran into a large enclosure on a farm."

In this most interesting *Russian* stampede it is noteworthy that (1) the horses were not picketed at all, such was the confidence of their riders in their docility and discipline; and

* The reader may compare with this narrative Byron's description, in "Mazeppa," of the evolutions of a "troop," or "squadron," of *wild* horses—

"*Headed by one* black mighty steed,
Who seemed the *patriarch* of his breed."

† With this incident may be compared one that happened during some of the fierce battles near Metz—in the course of the recent Franco-Prussian War—in which many of the Prussian cavalry had been slain. When the evening muster-call of a certain Prussian cavalry regiment (1st Dragoon Guards) was sounded, over 600 riderless horses came in answer to the familiar summons.

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that (2), in the height of their panic, the terror-stricken horses showed "a *method* in their madness," in so far as they were able to appoint and to follow a *leader*, as well as to move in *one orderly mass* with a single will and aim. The effect of the *appel* on the *old* chargers will be variously explained. Some will attribute it, as a mere mechanical result, to the force of association, of habit and discipline. But their behaviour is capable of being accounted for also on higher grounds. It is at least a fact that sober *reflection and reason* would have led to a similar result in man; for it would have taught him to expect both food and protection, rest and comfort, instead of the hunger-struck, shelterless, weather-beaten condition of the hopeless exile. Moreover, *hesitancy* or indecision implies consideration; which again involves reflection and reasoning in the balancing of advantages and disadvantages, probabilities or eventualities.

In *all* these cavalry stampedes—Russian as well as English—the *apparent simultaneity* of the panic, in a whole troop, squadron, or larger body, of horse, is of interest. *Apparent* simultaneity, I repeat, because when the phenomena of the panic are analysed there is found to be a rapid succession of attacks, instead of a really coincident or cotemporaneous affection. These panics are usually described as having developed themselves at the same moment in scores or hundreds of animals. But probably in *all* cases one or two animals are first startled and become panic-stricken, and their alarm communicates itself *by sympathy* to the others; so rapidly, however, that *practically* it may be described as a simultaneous affection, and it may really appear to be so to their riders, who, taken by surprise, are themselves thrown into a sort of panic by the sudden and unexpected disappearance of their horses, and who are not in a position calmly to observe or analyse the sequence of phenomena. Thus, in the account of the Russian stampede, it is in one place asserted that "*in one instant*" 900 horses fled. But this is a mere figure of speech, not to be construed too literally; for in another part of the same narrative, the origin and *gradual* growth of the panic is fully and correctly described. It has to be observed, also, that in all panics—equally among other animals and in man—*imagination* must exert a powerful influence in exaggerating, or in creating ideas of, *danger*.

I have been much struck, in reading the accounts of these stampedes, by the frequency with which disabled animals are summarily disposed of by *shooting*. This, indeed, seems

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the usual treatment of all domestic animals when they threaten to prove unserviceable for man's selfish purposes! Assuming that such a procedure is desirable in cases where further suitability for man's purposes can be *proved* no longer to exist, there can be no doubt that, by the summary process of shooting, large numbers of animals are rashly and inhumanly destroyed that would, if permitted to survive, continue to prove useful to their ignorant masters; and this for two reasons at least, viz., that, on the one hand, the *diagnosis* of affections that are supposed to threaten, not only uselessness, but sometimes positive danger, to man, is faulty in the extreme; while, on the other, our domestic animals do not get the benefit of that "conservative surgery" or that "expectant medicine" which at present characterise the treatment of *human* disorders. There can be no doubt, for instance, that countless valuable dogs are slaughtered ruthlessly merely because they are *supposed* to have bitten human beings, and are, on that account alone, *reputed* to be rabietic. Whereas, at least in the majority of such cases, the animals may be proved to have bitten—usually under sufficient provocation; but they cannot be shown to be rabietic, or it can be conclusively proven that they are *non*-rabietic! * There seems to be something grossly inhuman in condemning to an ignominious death—just when old age or accident abates the full vigour of life and renders them less useful than heretofore—the poor dog that has for years been a man's closest *companion* and most trusted *friend*, or that has been the loved and affectionate *playfellow* of his children; or the good horse that has, perhaps for even a longer period, been his tried and faithful *servant*, and borne him in all sorts of peril! It is difficult to understand—when we bear in mind how much they have in common in their feelings and their general mental endowments—on what principle it is that such a marvellous difference is made in the treatment of man, and of the domestic animals that are so intimately associated with him.† There is no good reason why we should not have, for the lower animals, the same kind of provision for old age or infirmity, accident or disease, that exist so plentifully for the *human* beings that are so frequently greatly their inferiors! Why should we not have, for instance, (1) homes or refuges

* See what I have said on this subject in a paper on "Madness in Animals," "Journal of Mental Science," July, 1871, p. 187.

† See also what I have said on this subject in my pamphlet on "The Physiology and Pathology of Mind in the Lower Animals," p. 18.

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for stray animals; (2) asylums for the aged and infirm; (3) hospitals for the treatment of accidents and disease; (4) schools for the moral or mental—as well as for the physical—training of the young? On the contrary, the strongest arguments might be adduced—based on the community of mental endowment between man and the lower animals—for the establishment of such institutions; of which it is to be earnestly hoped the Brown Pathological Institute, now being established in London,* will be but the forerunner. Such institutions—for the care or treatment of the lower animals in age, accident, or disease—are by no means unknown in other countries if they are rare or practically unknown in our own; nor are they of *modern* growth. Thus there is at least one "*Dogs'* Home" in London; and there are, I believe, institutions of a similar kind in New York and one or two other American cities. An ancestor of the present Prince of Wales, who died in the year 948, made strict *laws* for the protection of *cats*. And Daubenton† describes a *Cat Hospital* as in operation at Damascus more than a century and a half ago, supported by public contributions—the fruit, like many another admirable charity, of religious superstition.

II. *Stampedes—attributable to fear or terror—of Domestic or Wild Animals during extensive Conflagrations.*

A. The Great Fire of Chicago in October, 1871.

It is of importance here to note (1) that the same influences —*terror and despair*—affected, at the same time and in the same way, *man and other animals;* and (2) that the effect of the *same cause*—the alarm created by the sudden and extensive conflagration—was *different in different individuals*, equally in man and among the lower animals.

Fright or alarm on the one hand, and *fear or terror* on the

* The "Daily Telegraph," of Novem. 21, 1871, announces that "The Brown Institution," in Wandsworth Road, Vauxhall, S.W., will be opened on December 1, 1871, for the reception of sick and injured animals. The announcement states further that the Institution is under the government of the University of London; that it is intended for studying and endeavouring to cure the maladies and injuries of quadrupeds and birds useful to man; that this is to be without charge beyond the immediate expenses—the owner defraying simply the cost of maintenance of each animal under treatment; and that a resident veterinary surgeon will attend daily—Sundays excepted.

† Churchill's Voyages, vol. i, 1704.

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other, frequently produce not only different but opposite effects; both groups of results, however, being equally disastrous. While the former causes of mental disorder most generally lead to violent and dangerous *action*, to excessive *stimulation* of certain faculties such as *imagination*, the latter are apt to *paralyse* the power equally of action and of thought —a stupid and fatal *inertia and inaction* being the result. Thus, in "The Field" (of September 23, 1871), a correspondent describes a group of partridges as so frightened by a stoat that they were seen *running* and screaming "in a state of great agitation." Here the animal was rendered incapable of using its wings for flight; and similar cases in birds, as well as in many other animals, of inability to make use of their limbs in seeking safety by flight from a dreaded enemy, are by no means uncommon. For instance, the rattlesnakes (*Crotalidæ*) possess the power of instantly depriving of all faculty of motion or volition birds, squirrels, and hares, rendering them truly *panic*-stricken, helplessly awaiting their death-blow from their formidable and relentless enemy.*

Amidst the burning of Chicago "Horses rushed like *maniacs* through the streets," says the "Glasgow Weekly Mail," of October 28, 1871. "One splendid team, attached to a coach, ran over the Van Buren Street Bridge, which had been charred and weakened. Just as the *mad* horses had passed the centre it gave way, and they plunged down through the lurid glare into the scarlet river below." . . . . "Horses, *mad with fury*, rushed through the burning streets," says "The Scotsman," of Oct. 27, 1871. "Animals burst forth from keeping, and rushed *blindly* among the flames, adding to the terror of the scene, as they gave forth their *cries* of dread," says the "New York Herald," of Oct. 10, 1871. "Hundreds of horses and cows have been burned in stables; and on the north side numbers of animals, though released from confinement, were so *bewildered and confused* by the sea of fire which surrounded them that they rushed wildly to and fro,† uttering *cries* of fright and pain, until scorched and killed" ("New York Times," Oct. 11, 1871).

On the other hand, cartmen and draymen "Strove the utmost to save their horses. But, in cases of fire, horses seem to lose all the instinct which, under ordinary circumstances, would

* Dr. Baird: "Cyclopædia of the Natural Sciences."

† Schreyer paints a picture of horses trying to escape from a burning stable, where they are represented as "in passionate, if not delirious, movement."

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save them from danger, and stand *stock-still* in their stables, their flanks and sides shaking in the *agony of terror*, and utterly refuse to be taken or driven from their stables, which, poor beasts! they have always considered their place of safety, where no harm can reach them. On this awful night, above even the roar of the flames and the crash of falling timbers, could be heard the *shrieks* of the horses ringing out on the night air. They would not be driven away; but, *stupefied with fear*, fell down in their stables, and were roasted alive" ("New York World," Oct. 11, 1871).

Contrasting now the condition of the panic-stricken *human* inhabitants of the burning city with that of the horses and cattle, as above described, we are told that: "The stampede was sickening beyond the power of words to tell. *Men and horses* were jammed on the bridge, women and children clinging alike to each other, and the most precious of their household effects. Some of them, with the clothes nearly torn from their bodies, ran *blindly about*, swearing and moaning." The fire "had driven the inhabitants into Lake and South Water Streets, and on to the bridges, *much as a prairie fire stampedes affrighted animals!* The streets were filled with a *distracted* people, panic-stricken. . . . . An overwhelming sense of catastrophe, beyond the power of man to arrest, robbed this surging riot of wretches of the usual petty consideration of life. Those who were strongest and most cowardly knocked the others down in their delirium. Men, women, and children were trampled upon by human herds that fled *without reason* hither and thither, uttering the most pitiful *groans and cries of distress*" ("Edinburgh Evening Courant," Oct. 24, 1871). . . . . "Can it be wondered at that . . . . . the people became, as it were, *demented* and desperate? . . . . . The people had become *demoralised* . . . . they had lost all of their *temper and control*, and were *practically incapable of caring for themselves*. . . . . Pandemonium set in. . . . . The respectable portion of the people were *bewildered and stupefied*." . . . . . They "became *mad from despair* . . . . . a crowd of men and women reasoning, as it were, *without reason*." "Panic pervaded the entire population" (writes the correspondent of the "Scotsman," Oct. 27, 1871). "It seems singular, yet all experience shows it to be true, that, in times of great disaster, men are not chastened; but the *worst* part of their natures is roused to action. They become *moral maniacs*" ("New York World," Oct. 11, 1871).

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B. Prairie and Bush Fires of Michigan and Wisconsin, in October, 1871.*

"A squatter will tell you that, on some never-to-be-forgotten night, he was called out of bed by the *frantic* lowing of his cattle. On going out he found the atmosphere heated as if by a furnace, the sky ablaze with a lurid reflection, and the whole horizon thick with smoke. The cattle broke loose, and rushed to the nearest water. Herds of buffaloes, deer, and all the wild creatures of the prairies, dashed along in a *frantic* chase to escape the coming horror, or fell down exhausted to become the prey of the irresistible flames. One or two horsemen spurred on their steeds to a race with death. . . . . He saw the flames gaining ground; his horse on the point of sinking under the influence of heat, fatigue, and *terror*. . . . . A few days afterwards, when the flames had been extinguished . . . . . he found here and there the charred remains of buffaloes, tame cattle, horses and men" ("Daily Telegraph," of Oct. 25, 1871). During the Wisconsin bush fires,* "bears and other wild beasts have been driven in *dismay* from the woods and are flying about in every direction" ("New York Herald," Oct. 5, 1871).

During the burning of the town of Peshtigo, "in many cases the men became *deranged*, and gave up in *despair*; and sooner than be roasted alive *deliberately committed suicide* with knives and other weapons . . . . . Of their intense agony no tongue can tell nor words describe" ("New York Tribune," Oct. 19, 1871).

It is important to observe that the very various writers, who describe the stampedes of panic-stricken animals, agree in ascribing their behaviour to *madness*.† Now these correspondents of the press are probably neither physicians nor veterinarians, metaphysicians nor psychologists. They have no scientific nor philosophical *bias*; though they are not likely to be free from *popular* prejudice on such a subject as "Mind in the Lower Animals." They take, therefore, simply a common-sense view of the question in describing the phenomena

* A Stampede of man and domestic animals, during "A forest fire in America," forms the subject of a plate and relative description in the "Illustrated London News," of Oct. 28, 1871, p. 410.

† I have myself had experience of a "Bush" (that is a *forest*) fire, while travelling in New Zealand, in the district of Coromandel, North Island, in January, 1862.

‡ Thus paragraphs in the American newspapers, describing the burning of Chicago, are headed "*Maddened* Horses in the Fire" and "Bands of Drunken *Maniacs*."

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of *panic* both in man and other animals as assignable to *madness*. Their testimony is spontaneous, and in all probability *unwilling*, and is the more valuable on this account. *Unwilling*, because were it pointed out that the application of the term *madness* to the lower animals implies the existence in them of a *mind* similar to that of man, capable of disorder by the same influences that produce *insanity* in him, the majority, at least, of the "special correspondents" in question would probably withdraw the term *madness*, and substitute *frenzy*, *fury*, or *franticness*, or any similar term, which, in their opinion, might not commit them to the heterodox admission that animals possess *mind*, or that their mind, if they *must* be allowed to possess one of some sort, is of the *nature* of that which has hitherto been supposed pre-eminently to distinguish man! But, whatever the term employed to describe the phenomena of panic, there can be no doubt, on the one hand, that they cannot, by any ingenuity in the perversion of facts, be ascribed to *rabies*, *distemper*, or other specific disease with which veterinarians are in the habit —most erroneously—of invariably associating *madness;* while, on the other, both the origin and cause of the affection show it to be purely emotional or *mental*. In short *panic*, as above described—equally in England, Russia, and the United States —can only be regarded as an *epidemic, temporary, acute form of Insanity*. There is a strict analogy between the panics above described and the "stampedes" of disheartened armies—as illustrated for instance during the recent civil war in America: or to the panics of the occupants of crowded theatres, churches, or steamboats, on the cry of fire being suddenly and unexpectedly raised. There is the same sudden *startling;* the same rapid *communication of alarm by sympathy;* the same headlong, heedless, precipitate rush, "anywhere, anywhere"—too frequently and literally—"out of the world!"

The general phenomena and the disastrous results of *panics* in man, and in other animals, are unquestionably the same in all their essentials. In both cases there is the same sudden change, perversion, or loss of natural character.* Presence of mind, courage, self-control, cautiousness, prudence, circumspection, firmness; the power of calm reflection and deliberation, of avoiding perils, of calculating the consequences of proposed acts, of anticipating the effect which given action

* Some of the phenomena and effects of such change of the natural character are pointed out in my pamphlet on "The Physiology and Pathology of Mind in the Lower Animals," p. 11.

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will produce, are all lost; the instincts of self-preservation and love of life, of hunger and thirst, are abrogated; there is no designed or definite purpose, no discriminating will; a morbid *imagination* inordinately magnifies danger; terror is *expressed* by heart-rending cries or screams; man and animal alike flee blindly from dangers that are frequently imaginary into those that are very real—rushing into self-destruction of the most self-torturing kind; or they die sometimes from sheer physical exhaustion, sometimes from excessive emotion.

Some authors describe this self-destruction as *suicide*: an unfortunate term, however, which involves the element of *design or deliberation*, and, according to many legal writers, from Blackstone downwards, also the presence of "a sound mind." *Self-destruction* in such cases is, so far at least, analogous to that of the young salmon, whose migratory instinct causes it, at certain seasons, to leap out of the fresh water, and to commit —what Darwin speaks of as—"*unintentional suicide.*"* A somewhat similar phenomenon occurs in the common swallow. At the migration-period its habits change (*e.g.*, it becomes restless and noisy). A migratory bird, if caged at this period, will beat its chest against its bars till the skin is denuded; and it is probable that the excitement of the *un*gratified instinct is, under such circumstances, a frequent cause of *death* †—directly or indirectly—just as it is also a most likely cause of *insanity*.

But the migratory instinct, when gratified, sometimes leads, apparently, to quite as disastrous results,‡ and on a larger scale. At least, Dr. Baird, of the British Museum,§ a competent authority, in describing the periodical migrations, in bands, of the Scandinavian Lemming (*Myodes Norvegicus*), says—"Nor do they stop till they reach the sea, where *thousands are drowned.*" "The Treasury of Literature" (for Novem., 1871) says of these Lemming-migrations: "*Thousands* are often found dead: and their bodies have been known to infect the air for *miles*, creating malignant disorders, which very widely and rapidly spread. . . . . It is said that ultimately their processional excursion ends in *cannabalism:* for

* "Descent of Man," vol. i, p. 83.

† Darwin's "Descent of Man," vol. i, p. 83.

‡ During the autumnal migration of partridges from the north of Scotland, in 1871, it is stated by the "Elgin Courant," of Novem. 3, 1871, that "Several benighted birds, probably attracted by the gas lights, were found dead in the streets" of the city of Aberdeen.

§ And Fellow of the Linnean Society; in his "Cyclopædia of the Natural Sciences," 1861.

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they eat each other. This is explained by their coming to the sea, which all do not attempt to cross; and having devoured all herbage they will not turn back, but quarrel and fight; and perhaps, in the extremity of their hunger, they do eat each other to some extent. . . . . Whenever the progress is interrupted nothing stops them. Impelled by *some strange power*, they go straight over or through it." Thus, it is stated, they will "boldly plunge" into any *fire* that bars their *straight* line of march. "If a house stops their course and they cannot get *through* it, they will continue in front *till they die!*" "Chambers's Encyclopædia" (vol. vi, 1864, article on the "Migrations of Animals"), says: "The most remarkable instance is that of the Lemmings; which, *at no definite epochs*, but generally once or twice in a quarter of a century, traverse Nordland and Finmark in vast hosts, ending their career in the Western Ocean, into which they enter and come to a *suicidal* end; or, taking a direction through Swedish Lapland, are drowned in the Gulf of Bothnia." These migrations have been supposed to arise from want of food; but this theory is untenable, for they do not migrate in famine times, nor do they go to places where food is more abundant or more suitable. Even if such a theory explained the migrations, it would not account for the wholesale *self-destruction* of the animals. Whether the latter is accidental or deliberate—intentional or unintentional *suicide*—there is no evidence to prove. But the act can be accounted for on the supposition of the existence of blind *morbid impulse*, or of *panic*, however caused. "The reason of the migration itself," adds Dr. Baird, "is not well understood."* The whole circumstances, however, render it probable that such phenomena should be relegated to the category of *epidemic mental disorders*.

An illustration of a panic in cattle, arising from causes different from any of those already described, is to be found in

* According to "Chambers's Encyclopædia" (vol. vi, 1864, p. 448), the *cause* of the migration of *other* animals is not, at present, understood. Thus the wanderings of the African *Spring-bok* are not explicable on the usually assigned theory of the causes of animal migrations, viz.: (1) search for food or water; (2) for a position in which to spawn or breed, under a reproductive impulse or instinct; (3) or for a warmer temperature. The difficulties of accounting for some of the migrations of birds are stated by Sir Wm. Jardine in his and Jesse's edition of "White's Selbourne" (1851, p. 87). In the same work, White himself remarks (pp. 130-1): "There are doubtless *many* home internal migrations within this kingdom that want to be better understood. Witness these vast flocks of *hen* chaffinches that appear with us in the winter without hardly any cocks among them. . . . . I see every winter vast flights of *hen* chaffinches, but none of cocks."

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the irritation produced by "the act of oviposition" in the Bot-fly (*Œstrus Bovis*). "It appears," says Dr. Baird, "to be attended with either severe suffering, or great *apprehension;* as, when attacked by this fly, cattle become perfectly *furious. Terror and agitation* seem to affect the *whole herd.* The unfortunate *individual first attacked* flies bellowing from the rest of the flock; . . . while the remainder, in a state of wild *affright, follow* in its rear, and chase round the whole meadow with headlong speed." Here again we see the effect of *sympathy* on the one hand, and of *imitation* and imagination on the other. Panics among *sheep* are both common, apparently, and frequently disastrous. Youatt, in his work on the Sheep (1856, foot note, p. 29, quoting from the "Annual Register" of 1808), gives an instance in which 123 sheep were lost out of a flock of 800, near Guildford, Surrey. Being *frightened* by a dog, one jumped over a hedge down a steep incline, and was killed, the others following helter-skelter and tumbling the one upon the other with such rapidity that adjustment or extrication was impossible. In lambs there is sometimes a delirium or mania, referable to phrenitis, which has an *epidemic* character. Thus Youatt relates (foot note, p. 395, quoting from "Lawrence on Cattle," p. 632), that in one case in Suffolk "a number of the lambs ran skipping up to the top of the roof" (of a barn) "as if they were possessed by a thousand demons.* The whole parish wisely concluded they were bewitched, and a wretched and aged pauper became the object of their suspicion and deadly hatred. The senseless and horrible supposed prevention of witchcraft was resorted to, namely, *burning* one of the poor animals *alive!*"

I cannot at present cite further illustrations. But I have little doubt that he, who will take the trouble to *seek for* further examples of panics, or other forms of *epidemic mental disorder*,† among the lower animals, both wild and domesticated, will have no difficulty in finding them. For instance, parallel phenomena must occur when a wolf suddenly introduces itself among a flock of sheep, or a fox unexpectedly pounces into the midst of a flock of geese, or of barn-yard fowls. And, moreover, panics of this kind can

* With this instance of *demoniacal possession* may be compared that of the swine mentioned in Scripture (Luke viii, 33; Mark v, 13; Matthew viii, 32).

† It is somewhat singular, that, in no recent treatise on Insanity—so far as I remember—is there any section on *epidemic* mental disorders, even in man! In such works, for instance, as those of Bucknill and Tuke, Maudsley, or Blandford, the word *epidemic* does not occur at all in their indices or tables of contents.

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easily be *produced artificially*, and their phenomena studied and analysed at leisure. They are of course producible most readily in animals that are naturally *timid* and easily startled or frightened, such as sheep or hares, squirrels, certain horses and dogs, and many birds and lizards. Various even of the lowest animals show, moreover, in a marked way, the sometimes singular results of *alarm*. Thus, the lobster, "when suddenly alarmed by a loud noise, such as a peal of thunder, or the report of a cannon . . . . shoots (throws off) his claws immediately."*

A Medico-Legal Possibility. By FREDERICK NEEDHAM, M.D.

In a certain section of the public mind the impression seems somehow to have taken root that in a well-regulated asylum no accident can ever occur without affording evidence of want of care and forethought on the part of the responsible officers.

So far has this absurd feeling been carried that, within a recent period, a writer, professedly possessed of the requisite knowledge for his task, has been at the trouble of suggesting that when any patient dies from the effect of a certain class of accident the attendants in charge shall be subjected to the terrors of the law before they have been proved guilty of any offence, or in the absence of such proof; and that in default a victim shall be offered up on the altar of public opinion in the person of the unoffending medical superintendent.

It is needless to say that statements such as these carry with them their own condemnation. But it yet seems important that a record should be kept of such accidents, occurring from time to time in our practice, as suggest medico-legal possibilities, involving grave consequences to the credit of an asylum.

The investigations which have already been made into the condition of the bones in general paralysis tends to the belief that they are much more fragile in that disease than in health, or other forms of mental disease. An accumulation of facts upon this point will materially affect the question of death from apparent violence in such cases.

So, too, recorded instances of unusual accidents, not caused by, but at first sight attributable to, violence, will demonstrate two facts of considerable interest and importance to all those who are connected with asylum management—firstly, that the Superintendent of an asylum is at all times surrounded

* Dr. Baird, "Cyclopædia of the Natural Sciences."

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