'DARWINISM.

Mr. Francis Bain on the Theory of Evolution of Species.

Address Before the Literary and Scientific Association.

THE Literary and Scientific Association assembled in force in the Caledonia Club Hall, McEachern's Building, last evening, to hear the address of Francis Bain, Esq., of North River, on the Darwinian Theory of Evolution. The vice-President, John Newson, Esq., occupied the chair and introduced the lecturer, who was most attentively listened to, and at the close tendered a hearty vote of thanks and made an honory member of the Association. Charles Palmer, Hon. David Laird, Geo. E. Full, Hector C. McDonald and Dr. McLeod briefly expressed their admiration for the address and their views upon the Darwian Theory. Mr. Bain's address was as follows:—

The origin of the ten thousand forms of animal and plants which people our globe, has long been the unsolved mystery of the scientific world. In endeavoring to deal with the intricate problems which it presents, two classes of students have ever followed two distinct modes of investigation. Those who believe in the superintendence of an All Wise Providence, have looked in this department of nature, as in every other, for the operation of those laws and that harmony which are everywhere the insigna of His government, and the surety of His protective care; while those who recognise not God in His works have endeavored to explain the phenomena of life by the fortuitous combinations of natural circumstances.

The late Charles Darwin, Fellow of the Royal Society of England, following the methods of Lamark and other continental writers of the beginning of the present century, endeavored to explain the origin of all existing species of animals and plants by the doctrine of Chance Variations in the individual, and the "Survival of the Fittest." With the doctrine of the

SURVIVAL OF THE FITTEST

we have no quarrel. We know it to be the order of Providence that old things should pass away to be superseded by new and better. Old races die out and have died out in countless thousands in the past, to give place to new and more perfect beings adapted for a more advanced stage of the world's progress. But when we remember that in order to supersede the old, higher and newer beings must first be produced, and when we are told that this is effected by chance variations which may arise, we beg to dissent from such a theory and still humbly believe that the world's progress depends on something better than a wild carmagnole of fortune and of chance. And this, to us, is the first difficulty of Dawinism. It leaves the production of the grand fabric of animated being, that, with its base deep—laid in the infinite past, has filled the world through each succeeding age, with marvel, and beauty, and unbounded evidence of external skill, to the operation of blind, unreasoning chance.

Darwin informs us that he studied closely and attentively the variations of animals under domestication.

Especially did he study the very variable tribe of pigeons and the different breeds of horses and domestic cattle. And, so far as he recorded facts in this interesting field, we certainly have no fault with him. But when he leaves the realms of fact, and asks us to believe that such variations may be continued indefinitely, so as to produce all the multofarious forms of life that swarm in earth and air sea, we ask our philosopher to call a halt to his imagination, and remember the single fact that these variations may be circumscribed by the limits of the species.

Is it not a fact that all these fine varieties produced by breeders, if left to themselves, without continued care in breeding, have a "strong tendency" to revert to the original form? Darwin questions this. But the evidence is not far to find.

EVERY FARM AND STOCK YARD

throughout this agricultural Province bears a living testimony to the fact. Every farmer knows that it requires the utmost diligence, in care and breeding, to preserve his stock of valuable animals from degenerating. Go to the neglected farms in many parts of our Island and the dwarfed, shaggy and udderless cattle, with lank, beefless quarters; the long shanked and black-faced sheep; the wild, long-snouted porkers, that rush with a savage snort through the weed-grown fields, will afford you a lively picture of the rapid reversion of our domestic breeds.

Our cultivated grains show the same tendency. It needs the farmer's constant vigilance in cleaning and selecting his seeds to prevent their deterioration. Oats, for example, left to itself for a few seasons, sown without cleaning or improvement, would soon become so inferior in grain, and so important in chaff and beard that it might be taken as a standard speciman for that metaphoric wild oats which graver personages than the youth of our land are capable of sowing.

OUR LADIES

also are practically conversant with the fact of the persistent degeneracy of the finer kinds of flower seeds. For unless these have been grown with the utmost care and intelligence, they will be sure to give the most disappointing results. With the least carelessness, their tendency to revert to the original form soon manifests itself. In fact, our advanced modern agriculture is one solid contest with nature to prevent her highly modified forms from returning to their original standing.

We have many instances of domestic animals being returned to a state of nature, and they always revert towards the common original form. The half savage Eskimo dog of our own continent, the Dole, or wild dog of India, and the Dingo, of Australia, though living in the most dissimilar conditions of climate and surroundings, have all reverted to the same common form, color and appearance. In like manner the Sable Island horses, the wild mustangs of the prairies,—and the untamed steeds of the Pampas, all exhibit the same diminished stature, the same uniformity of color, the same lank limbs and viciousness of disposition which marks the reversion to the original savage form.

All these facts prove to us that the bounds of a species are determinate, and that, though it may be forced into varieties by artificial means, whenever these are removed, it naturally reverts to its orgiual form. Further, nature has girt round each separate species with a defence of protective laws, so that it may not pass its legitimate bounds. In natural reproduction there is: 1st, The great breeders' rule, that "Like produces like, or the likeness of some ancestor." 2nd, The well known law of the preponcency of established blood and the impotency of mere varieties to produce their kind. 3rd, Then, the duality of the sexes prevents individual varieties being perpetuated, and in nature every provision is made to prevent close intermarriage, thus preserving the purity of the species whole. Productive union beyond the bounds of the species is unknown. Viewing each species thus limited and defended by the laws of its all-wise Creator, we may readily adopt the belief of the great Swiss naturalist, whose life and labors have been the ornament of our own continent, that *each species is distinct and invariable*. Here, then, is

THE SECOND DIFFICULTY

of Darwinism. For if we do not find the variability of species to be a fact, how are we to accept a theory which has this principle for its very basis? Darwin informs us that while sailing leisurely down the sub-tropical shores of the South American continent, he was struck with the similarity in type between the existing fauna of that country and the animals which had peopled it in the later geological ages. This similarity, he tells us, is presumptive evidence that the fossil forms were the progenitors of the existiug species. A like similarity between the later fossil forms and the existing species in any particular district occurs the world over, and is the result of adaptation to circumstances. In Eastern America, in Europe, in India, in Australia, respectively, the anima's of the later Tertiaries bear a distinct resemblance to the existing fauna. But it would be a hasty conclusion, indeed, to assume that the fossil forms were the progenitors of the living tribes. In this North American continent of ours, for example—and the same is true for Europe and Asia—the Tertiary period was closed by an age of extreme cold—a reign of frost, and ice and death, when continental glacier and fields of perennial snow covered up for ages what is now the fairest and richest portion of the continent, and either extinguished every species of animal and plant or drove them far south into sub-tropical regions. When a temperate climate was again restored to our world, after thousands of years, all these regions were repeopled by the advent of tribes from the south. Could these fresh immigrants in any way be said to be the direct descendants of the tribes that perished in the thickening gloom of the great glacial winter night?

THE DISTURBANCES

occasioned in the geographical distribution of species, have been by the recurrence of periods of glacial cold, of the most overwhelming character. Tribes of plants and animals have been removed from the cold north and driven clear across the tropical regions, to establish themselves in the cold temperate lands of the far south. And to-day we can trace their tracks by the individuals which they have left round the mountain peaks of the intermediate countries. European plants are to be found in South Australia, and, in like manner, South Australian plants have been driven north to establish themselves in northern Japan and surrounding districts, and North American species are to be found in Patagonia and Terra del Fuego. In view of these frequent marchings and countermarchings of species from one hemisphere to another, across almost the breadth of the globe, it is impossible to assert that there has been anything like a continuous line of descent among the animals of any particular district.

Darwin makes a better point when he reminds us that there is a distinctive difference between the entire fauna of the American continent and that of the Eastern hemisphere. But when we remember that these two great bodies of land have been separated for long geological ages by abyssal oceans, the marvel is, not that there should exist the small differences which we observe, but the great secret of life is told in the fact that type and pattern, law and design have been wrought out with such uniformity of purpose, through the vast breaths of these two distinct continental areas.

It is a favorite theory with Darwinian writers that the peculiar marsupial fauna of Australia has been occasioned by the continued separation of that great continental Island from the rest of the world since mesozoic time, when this class of mammals alone existed. But the facts which we have just stated, show that no such continued isolation could have been. For if there have been extensive migrations of plants to and from that island within a very recent date, there certainly has been opportunity for the migrations of animals too. The peculiar character of the Australian fauna arises from the fact, as Professor Owen has pointed out, that the marsupial type is best adapted to a country where the mother, for many months, has to bear with her tender young in long journeyings over vast arid plains in pursuit of evanishing streams of water.

Darwin maintains that the present distribution is mainly due to descent. But when we understand the great climatal changes to which our world has been subjected in the not remote past, we see that such an explanation is entirely unsatisfactory.

THE DEVELOPMENT THEORY

demands that the fauna of isolated tracts, such as remote islands, should have a distinct and peculiar character. And yet we find that the most distinct, peculiar and exceptional species on the globe occur in the very bosom of the great continential areas. The *Ateles*, or Spider Monkeys of America; the *Tarsinus*, or Malmag and the *Galopithecus* or Flying Lemur of the Indian Archipelago; the spined Hedgehog, that rolls itself into a hemisphere of lances, more potent against its enemies than the claws of the fierce Felidæ; the common Bat, emulating the aeral life of the feathered families; the gigantic Whale, possessing the structure of the mammalia and pursuing the finny tribes; the Walrus, the Narwal, the Uncouth, and apparently malformed *Sloth*; the boney cased Armadillo, of South America, the Pangolin, of India; the Moose, or Elk, with its tremendous 28-branched antlers of 60 lbs., weight; the diminative Musk Deer, the graceful and peculiar Cameleopard; the unwieldy Hippopotamus, that ever since the days of Job has made the river of sub-tropical countries to boil like a pot,—all appear in the very heart of the world's densest animal population and in the great faunal areas. Even the Kangaroo, the Orinthorincus and the Echnida belong to the continental island of Australia.

It is the same with birds. The curious Hornbills and Hornways, the Toucans and babbling Parrots; those winged gems, the much varied, but ever brilliant hummingbirds; the equally gay sun birds of the East; the Pea-cock and starry-plumed Argus Pheasant and the incomparable Birds of Paradise that floats its celestial plumes amid the richest tropical scenes of the Eastern Archipelago, all appear in the great crowded centres of tropical life.

No isolated tracts throughout the world, no lonely isles in the desolate waste of waters, exhibit peculiarities of forms should as these, though the very genius of the great modern evolutionary theory demands that in such secluded retreats, removed from the usual influence of the great body of their race, the most exceptional and singular forms should arise.

There are, however, as Darwin reminds us, certain groups of islands and tracts separated by broad ocean deeps which exhibit considerable peculiarity in species. Taking the most noted examples of these, the lonely Galapagos, the Solomon Islands, the Maderias and Canaries, the Maritius and other lonely spots in the Pacific's trackless roll. None of these present us with anything beyond the usual orders of the animal and vegetable creation. The same types, the same systems of structure, the same general forms, the same law and harmony and design appear in animate life here as in the rest of the world. The great land shells of the Solomon Islands, though overgrown in size, are not different in type and structure from the great body of pulmonate molusks through the world. The distinct species of Galapagos birds belong to South American genera. The rhea, or American ostrich of South America, is an ostrich still, though distinct from the African species, and both are allied to the cassowary, or ostrich of the East Indies. Even the distinct animals of Australia are not peculiar developments, but ancient forms preserved from change. Nor does Australia alone afford us links connecting the present with the deep mysteries of the past. The Crocodiles, the highest form of existing reptiles, have come down to us from early Mesozoic ages. And the Meocene species of the Sewalik Hills is the same as that which the Hindu reverences in the sacred Ganges to-day. The Pearly Nautilus, those fabled boatmen of the sunny south, and our own white Natica belong to genera of Silurian age. While the various species of Mussels, Poetens, Oysters, Mactras, Thracia, Tellinas, Astartes Yoldias, Anoprias Toredos and Unios, whose pearly shells crowd the sandy bottoms of our own blue bays, belong to genera of Mesozoic or Palazoic ages. None of these are peculiar types of animals, but simply ancient forms that have come down to us unchanged through the endless vicissitudes of millions of years.

(To be Continued.)

This Morning's Hurricane.

ONE of the severest hurricanes we have had for some time, accompanied by heavy rains, set in about midnight, and raged with great fury until this afternoon, when the wind calmed down considerably, and the storm, to some extent, abated. The first intimation obtained here of the approach of the storm was in the shape of a despatch received from the Meteorological Office, Toronto, by Mr. Arthur Newbery, the agent in this city, ordering the night signal up. This order was immediately attended to. Although there was a slight wind, accompanied by hail and rain between nine o'clock and midnight, the storm proper did not set in until about one o'clock this morning. The wind, which kept gradually increasing in violence until it had obtained a velocity of between forty and forty-five miles an hour, was first easterly, shifting from south to southwest.

At midnight another despatch was sent from the Meteorological Office at Toronto, to the agent here, ordering up the hurricane drum, but as the wires between Sackville and this station were not in working order, the despatch was not received until noon to-day—when the storm was almost over.

The wind continued to blow hard all the forenoon, and the tide, which was unusually high, swept the heads of many of the wharves, while egg cases, empty casks, shingles and other light articles were either carried off by the waves, or caught up by the wind and dashed against the warehouses. Flying *debris* made it exceedingly dangerous for pedestrians to be about, and several citizens who ventured too near the heads of the wharves received wettings and narrowly escaped going overboard.

Many of the schooners, moored in the stream, dragged their anchors. One, the William, having 180 sheep on board owned by Mr. Mutch, of Gallas Point, ran against the western side of Pownal Wharf, breaking a boat hanging on her davits and straining herself in the encounter. The waves were so heavy and high that the schooner was almost thrown up on top of the wharf, and the sheep had to be removed from the hold as it was thought that the jolting about would kill them. A schooner coming in the harbor went on the flats off the park, but soon got off again, and a scow containing several men drifted up the East River.

A portion of the western end of the fence surrounding the jail fell in about ten o'clock this forenoon, and one of the prisoners—a young man named John Elworth—who was in the yard at the time, took advantage of the opportunity and made his escape. Other fences, as well as trees, etc., were blown down, and shingles and pebbles, torn from the roofs of houses, were flying about promiscously. Telephone wires were crossed in many places throughout the city.

The St. Lawrence left here for Pictou at seven o'clock this morning, and arrived at four o'clock this afternoon—all well. The Princess did not leave Summerside for Point du Chene.

The storm also raged in Summerside, but no particulars as to its results are at hand.

LETTERS TO THE EDITOR.

SIR,—The editor of the *Protestant Union* has a remarkable penchant for jumping at conclusions. When challenged for going too far in his arraignment of the Stipendiary Magistrate, he declared that I was in sympathy with the "illicit rum traffic"—and, referring to my rejoinder, says it was "*hardly accidental*" that THE EXAMINER'S "Consistency" "appeared the same evening of the *Patriot's* attack on us." I can assure Mr. Frame that "Consistency" had not the remotest suspicion that any other person was writing about the matter. But, as the rev. editor very properly intimates, there *may* have been a *providence* in it. For sometimes, you know, although men like to call these things *accidents*, there is such a thing insisted upon by the clergy as a "*retributive providence*," and in this sense the rev. editor, looking through his theological glasses, may have jumped to the *correct* conclusion that it was "*hardly accidental*," that, in the midst of his desperate attempts to take the *official* life of his victim, both the dailies, "the same evening," should suumon him before the tribunal of a just and Christian public sentiment.

CONSISTENCY.

The Government Pond.

SIR,—The old adage, "Put a beggar on horseback and he will ride to the devil," is being verified here of late. A few months ago the road to Victoria Park by the seashore, was closed to the public, and now some crank in connection with the Board of Health, is determined to rob us of the privilege of skating on Government Pond, by having the waters turned off on the plea of *health*. Why, Sir, anyone but an idiot would surely know that the coming and going of the tide has no more effect in washing the bottom of the pond at this time of the year than it has of washing the muddled brains of some of our City Councillors.

Yours, etc.,
SKATER.