

propaganda, but it is not a light undertaking to enforce conditions that will ensure the real fruits going to the masses of producers and consumers. We have mortgaged our country to equip it with systems of transport for public service, then let a rightful share of the proceeds of that service go where it belongs. ALPHA.

A Rural School Fair Association.

Waterloo County has a new organization. The Rural School Fair idea seems to have taken hold, and the schools in North Dumfries Township, which have been holding such a Fair for the last few years, have organized a Rural School Fair Association. The pupils in each of the last few years, have organized a Rural directors, one from each school, and these directors met in the local office of the Department of Agriculture on Saturday, March 1st, and completed the organization with the following officers. The president is Frank McPhail, River Road School, and the Secretary, Scott Turnbull, R. R. No. 3, Galt.

In the formation of this organization, everything was carried on in a business-like way. Nominations were moved and seconded, nominations closed by motion, voting by ballots, and speeches, by the directors elected, as in any properly conducted business meeting.

Heretofore the Fair has been carried on by the Department of Agriculture, but in thus placing it in the hands of the pupils themselves, the Fair will not only become more substantial and progressive because the pupils will be more vitally interested, but it will also afford an education in business methods and in conducting an association of this kind. At the first meeting many important suggestions were offered for improving the Fair, and plans made for increasing its success. The association has already started a poultry breeding station, originated with Professor Graham's famous laying strain of Plymouth Rocks, obtained for the pupils last year, and eggs will be obtained from this source to continue the poultry work of the Association.

Work of this kind is bound to be of large educational value to the boys and girls in our rural schools.

Nature's Diary.

By A. B. Klugh, M. A.

An unusual migration is taking place in Ontario. The Canada Jay, a bird which is, as a rule, resident in the northern parts of Muskoka and northwards, has appeared in Eastern Ontario. Mr. Beaupre, of Kingston, has informed me that in January he saw several Canada Jays within forty miles of this city. This is very interesting news, as we have records of but two such migrations in Ontario, and I should be glad to hear from readers of the "Advocate" if they have seen any of these birds in any parts of central or southern Ontario.

The Canada Jay is about the same size as the well-known Blue Jay, but has no crest, and differs greatly in coloration. It is dull leaden-gray above, and dull yellowish-white beneath. The forehead is yellowish-white, the hind part of the head and neck is blackish, the wings have one whitish bar, and the tail feathers are narrowly tipped with white. The sexes are similar in coloration.

It is a very familiar bird in the northern woods, and is usually termed "Whiskey Jack" and "Meat Bird," the former being a corruption of the Indian name, "Wis-Ka-Tjan," which pronounced in English sounds like "Whiskey John," while the latter name is derived from its fondness for eating meat, about camp and pecking holes in deer carcasses hung up by hunters.

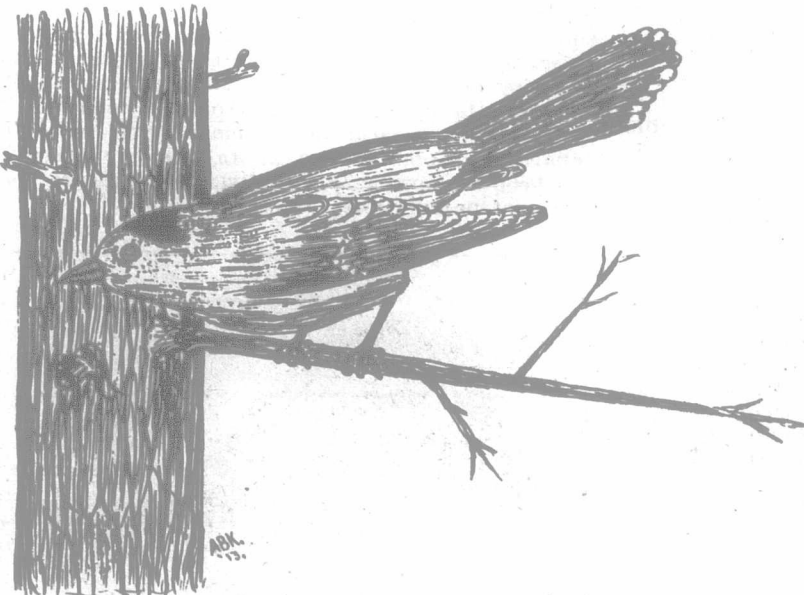
This species is a very early breeder, as it lays its eggs early in March and often has young hatched out when the temperature is below zero. The nest is bulky and cup-shaped, built of twigs, bark-strips, moss and grass and warmly lined, as it certainly needs to be, with feathers. It is usually placed in a spruce tree. The eggs are from four to five in number, grayish-white, marked with yellowish-brown.

The Canada Jay has a very soft flight, more like that of a great moth or an owl than a jay.

Year after year the Canada Jay remains, summer and winter, in the northern woods, only on very rare occasions migrating southwards. One such migration occurred in the winter of 1839-40, and was recorded by one of our early naturalists, the late Hon. G. W. Allen. This migration extended as far south as Toronto. Then for sixty-five years the Canada Jay kept within its usual limits, and not until 1904 did another migration occur. In October of that year a general migration into the southern portion of Ontario occurred. They were first reported from Madoc, Hastings County, by the Rev. C. J. Young on October 7th. The next reports came from Toronto, where they were seen on October 15th. I saw them at Puslinch Lake, near Guelph, on October the 31st, and again on November 16, and my friend,

E. J. Colgate, saw them near Guelph on November 3rd, 12th and 17th. In October, November and December they were reported from Penetanguishene, Millbrook, Galt, Kingston, Wellington (Prince Edward County) and Belleville, and these records show how widely spread was the migration.

We saw nothing of the Canada Jays returning north after the migration, and the probability is that none lived to return. It is an unfortunate fact that many people seem to think that any strange bird or mammal seen must be shot, and, then having shot it, they are no wiser about it than before. It is often merely turned over a few times and then left where it fell, or it may possibly be taken home and shown to friends who know as little about it as the shooter. The very least that should be done in the event of shooting a strange bird or beast is to send it to someone who can identify it and, if it is in good enough condition, preserve it. The writer will be glad at any time to identify such specimens, and so will my friend, P. A. Taverner, of the Victoria Museum, Ottawa. Mr. Taverner has just made an appeal for material for a great National Museum at Ottawa and has written a very



Canada Jay.

clear and concise little book telling how to prepare specimens of all kinds. He will be glad to send it free of charge to anyone asking for it.

I heartily second Mr. Taverner's appeal. We certainly need a large museum to which our people can go and study our native forms of animal life, as at present we find more specimens of our Canadian forms in the museums of Europe and the United States than in any museum of our own. If we are to have such a great National museum, we must take as our motto: "Do it now," and make a good beginning. And enough good material goes to waste every year in Canada to make such a beginning.

Science and Stones.

By Peter McArthur.

The questions asked by Mr. Way in "The Farmer's Advocate" of February 20th and passed on to me by the editor, are of a kind that I usually avoid. If a writer is to make any pretence of being even decently informed he must be allowed to choose his own subjects, and one of Mr. Way's questions goes so completely to the root of things, that all I can do is to show my ignorance of the principles involved. At the same time I may be able to show that the great and learned are also somewhat ignorant, and that may furnish some amusement. Let us deal with his questions in the order in which they are given. He begins by asking, "Do not some of the positions, even of science, need readjustment, restatement or elucidation?"

I find that this question has been answered fully by Washington Irving in his humorous history of New York. After reviewing the many theories of creation and the universe generally, that have been offered to the world by the sages and scientists of different ages, and showing how they contradict one another, he sums up the whole matter in this fashion:

"Thus it would seem that knowledge and genius, of which we make such great parade, consist but in detecting the errors and absurdities of those who have gone before, and devising new errors and absurdities, to be detected by those who are to come after us. Theories are the mighty soap-bubbles with which the grown-up children of science amuse themselves, while the honest vulgar stand gazing in stupid admiration, and dignify these learned vagaries with the name of wisdom! Surely Socrates was right in his opinion, that philosophers are but a sober sort of madmen, busying themselves in things totally incomprehensible, or which, if they could be com-

prehended, would be found not worth the trouble of discovery."

On glancing back on the page from which I have copied this conclusion, I find a sentence which fully answers Mr. Way's suggestion, that science needs restatement and readjustment:

"It has ever been the task of one race of philosophers to demolish the works of their predecessors, and elevate more splendid phantasies in their stead, which in turn are demolished and replaced by the air-castles of a succeeding generation."

Referring to the way in which we see a fire at night, he asks, "Since the space is, for the most part, dark between the fire or source of light and the eye of the spectator, how does he see the fire—in other words, how do the rays of light from the fire make a distinct and vivid impression through the intervening darkness?"

Mr. Way was not the first to notice the power of light to make itself visible in the darkness. Shakespeare says:

"How far that little candle throws his beams!

So shines a good deed in a naughty world."

Since this question has been propounded I have laid it before several persons, and they seemed disgusted that anyone could ask anything so simple.

"Why, the fire is there and stands out in the darkness and we see it, and that is all there is to it." Of course that does not explain anything, but it reveals the commonest mistake in all the world. We all jump to the conclusion that because we are familiar with a thing we know about it. As a matter of fact one thing is just as mysterious and unintelligible as another. Light and its transmission is as mysterious as wireless telegraphy, but because we are familiar with light we never think about it, while wireless telegraphy seems incomprehensible because it is new and unfamiliar. In speaking of miracles Carlyle says some-

where that to be able to move one's hand is as miraculous as anything else in the world. It involves a nicety of balance between air pressure, gravity and the strength of the muscles, that is nothing short of a miracle. It is the same with everything else in nature. Mr. Way has simply selected one fact that attracted his attention just as the falling of the apple attracted the attention of Newton, and started the train of thought that resulted in his discovery of the law of gravity. Newton also grappled with the question of the transmission of light, and tried to explain it by what is called the crepuscular theory. He held that the flame gives off small particles which reach the eye, and make us see it. His theory, however, has given place to Clerk-Maxwell's theory of light waves, and I think that this is now the accepted explanation. As Irving remarks ironically, it is a peculiar fact that the latest authority is also the best. Not being a professional physicist I cannot undertake to explain Clerk-Maxwell's theory with certainty, but I remember that some years ago when discussing another question with a noted physicist I happened to give my understanding of the wave-theory of light, and he said that it was a fairly accurate statement in ordinary language of Clerk-Maxwell's theory. With this endorsement I shall venture to give it here. If it is wrong you must blame the polite professors.

Scientists assume that all space—the space between molecules as well as the space between the stars—is filled with a substance called ether. They compare it to "an palpable, and all pervading jelly through which light and heat waves are constantly throbbing." A fire, such as Mr. Way described, is supposed to start waves in this ether that pass out from it in all directions in the form of "an ever increasing sphere." (The phrase quoted is the one which the scientist said gave expression to Clerk-Maxwell's theory, and I give it for what it is worth.) When this wave in the imagined ether strikes the eye, we see the source from which it started or the object by which it has been deflected to us. When the waves that reach us are attenuated by travelling a great distance, we see only their source in the flame. For this reason we seem to be seeing the flame through the darkness. The light of the flame is not strong enough to throw all objects into relief as does the light of the sun. But all this does not explain the mystery of light waves acting on the eye and brain, and enabling us to see all. Now this may not seem very intelligible, but perhaps that is just as well. As Zangwill