6

THE TRUE WITNESS AND CATHOLIC CHRONICLE.

GEELONG, Tis night. Two lovers lean Upon the gate; A nearing form is seen-It is their fate.

A plercing scream from her The welkin rent, It was, as you infer, Her pa-ri-ent.

The lover thought to scoot, Alas! 100 late, He's holsted with a boot Beyond the gate.

AGRICULTURAL.

The Air.

The Air. The air, like the soil, consists of an immense ulk of materials which, so far as the growth of lants is concerned, have malaiy a mechanical action. This immense mass contains *carbonic actid* in proportion of about one part to twent five hundred, and *ammonia* in very much smaller proportion; it also contains very varying am-ounts of watery vapor. These three substances, -for, although only thin air to our senses, they are as substantial as the soil itself, and can be weighed, and measured taken apart and put to-gether again with as much accuracy as though they were wood or stone,-are the great sources of the material of which are plants are com-posed.⁶ All of the plant, whether the smallest grass or the largest tree, is made up of the con-stituents of *water*, *carbonic acid*, and *ammonic*; save only the small part that remains as ashes after burning.

after burning, One thousand pounds of red clover hay, out of which the water had been dried, contained—

Ash	** **	į:	14 44 48	carbonic acid
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1,000 lbs. These proportions vary somewhat in different analyses, but not materially. Such of these sub-stance4 as exist in the air are taken into the plant by the leaves, or, having been carried to the soil, by rains, (or added to it by manure, or by the decay of vegetable matter.) through the roots. The ashes are taken directly from the soil. The manner in which they are taken, and the sources from which they are taken most readily, will be discussed hereafter. What J de-sire to especially emphasize in this connection is the fact, that by far the larger part of all plants comes originally from an atmospheric source, and that only a small precentage of their con-stituent parts is supplied by the mineral portion of the soil.

The Plant and its Food.

The right but is root. The cultivated plant has two sets of feeding apparatus: the leaves and green stems absorb carbonic acid from the air, and the roots absorb from the soil the mineral matters, ammonia, and carbonic acid. Within the organs of the living plant such changes take place as are necessary to separate these different compounds, to reject what is not needed, and to assign to its proper place in the organism each element that

necessary to seperate these timerent compounds, to reject what is not needed, and to assign to its proper place in the organism each element that is to be relained. These changes take place without our aid, are beyond our control, and are therefore, in a practical point of view, not neces-sary to be aiscussed here. In red clover hay fully ninety per cent.,—and in all other products about the same propor-tion,—of the dry weight consists of carbon, oxy-gen, and hydrogen, which are always aboun-dantly supplied to the plant by the decomposi-tion of carbonic acid and water. Of the ashes, certain ingredients, as magnesia, silica sul-phuric acid, oxide of iron, chlorine, soda, the oxide of manganese, and generally lime, are either found in alt arable soils in such abundant quantities that it is not necessary to add them in manure, or they may be so cheaply and easily obtained that they are of secondary importance in practice.

in practice. Therefore, it is chiefly desirable for the farmer Therefore, it is chiefly destrate for the farmer to give his attention to the sources from which the plant may derive its three remaining ingre-dients,—*mitrogen*, phosphoric acid and potash. Without these none of our cultivated plants will attain their full development, and when a soil Without these none of our cultivited plants with attain their tuil development, and when a soil ceases to produce good crops, [supposing it to be in good mechanical condition,] it is almost always in consequence of a deficiency of one or more of them. I propose therefore to restrict my remarks about agricultural chemistry to a consideration of these three substances,—with-out a proper management of which no man can be an entirely practical farmer. He raises no crop which does not contain them, he sells no animal or vegetable product which does not take them from his farm, and he has no soil so rich that they, or some of them, need not be re-turned to it to keep up its fertility. Whatever course of cultivation he pursues, he should never lose sight of these elements, and he should pay no greater heed to the dollars and cents that he receives and pays out than to the nitrogen, phosphoric acid, and potash which constitute his real available capital, and whose increase and decrease mark the rise and fail of his true wealth.

either by fire or by decay, their nitrogen escapes in the form of annionia, which gives great value to all animal manure, which is one of the manural ingredicats of rain water, and which is the farmer's best assistant in making his land produce the largest crops that with its supply of mineral food, it is capable of grow-ing.

ing. , Lieb'g, speaking of the sources of the nitro-gen of plants and of the supply of ammonia,

"there are, on the other hand, numerous facts "showing that the formation in plants of sub-"stances containing nitrogen "takes place in proportion to the quantity of "this elemont conveyed to their roots in the state "of animal matter." "I be putrefaction of "animal matter." "I be putrefaction of "ullet us picture to ourselves the condition of a "well-cultivated farm, so large as to be indepen-"dent of assistance from other quarters. On "this extent of land there is a certain quantity "of nitrogen contained both in the corn and "fruit which it produces, and in the men acd "animals which feed upon th-m, and also in "their excrements. We shall suppose this quan-"tity to be known. The land is cultivated with-"out the importation of any foreign substance "containing nitrogen. Now, the products of "this farm must be exchanged every year for "money and other necessaries of life-for bodies, "therefore, destitute of nitrogen. A certain pro-"portion of nitrogen is exported in the shape of "corn and cattle, and this exportation takes "place every year, without the smallest com-"pensation; yet after a given number of years, "the quantity of nitrogen will be found to have "increase of nitrogen? The nitrogen the excre-"monts cannot reproduce itself, and the earth "cannot yield it. Plants, and consequently "animals, must, therefore, derive their nitrogen "from the atmosphere." "A generation of a thousand mil-

"cannot yield it. Plants, and consequently "animals, must, therefore, derive their nitrogen "from the atmosphere. A generation of a thousand mil-"lion men is renewed every thirty years; thou-"sands of millions of animals cease to live; and "are reproduced in a much shorter period, "where is the nitrogen contained in them dur-"ing life? There is no question which can be "answered with more positive certainty. All "animal bodies during their decay yield to the "anonia. Leven in the bodies burled sixty feet. "des Ianocens, at Paris, all the nitrogen con-"tained in the adipocere was in the state of am-"monia. The "introgen of putrified animals is contained in "the atmosphere us annonias' in the state of a "gas which is capable of entering into com-"bination with carbonic acid, and of forming a "volatile salt. Annonia in its gaseous form, as "well as all its volatile compounds, is of extreme "so'ubility in water. Annonia, therefore, can-"and convey it to the surface of the earth. "Hence, also, rain water must at all times con-"tain ammonia, though not always in equal "quantity. It must contain more in summer "than in spring or winter, because the intervals "of time between the showers are in summer "than of the first must contain more of it than "han of the first must contain more of it than "han of the earth at one time." conveyed to the earth at one time,

cause an increased absorption of ammonia from the air. Nitrogen is not only a necessary element of all plants, it is even more largely constituent of the bodies and of the milk of animal, and it re-inains an object of the greatest care of the farmer through the whole course of his operations. He must first procure it to apply to his growing crops, must next so use it in his stock feeding as to produce the greatest development of meat, of milk, or of wool, and then must so economize that which the animal has rejected, in the ma-nure, as to have the largest possible supply for his future crops. his future crops. (To be Continued.)

"The pure flour of the finest Mustard Seed without any adulteration or dilution." This is the report of the Government Analyist on

known picture of "Nero's torches." Kraszeviski has now gone to Vieuna to thank the Emperor for the decoration he has received from him, and will then pass the winter in Italy.

Hor. Mr. Flynn.

The Commissioner of Crown Lands, in the Chapleau Administration, Hon. Mr. Flynn, is one whom a large section of the Province recognize and welcome as an able, willing and fitting representative of their erstwhile ignored demands. Mr. Flynn is an Irish Catholic who takes peculiar pride in upholding the grand old principles of his forefa-thers. This he does, not in the rabid style of those who fatten on the susceptibilities of an earnest and honest people. He is no rabid politician, his convictions are framed on the solid groundwork of good sound common sense, which needs not the false and forced glitter of clap-trap declamation. They may succeed in giving a little annoyance to the Hon. Commissioner, no doubt, if they are able to carry out their expressed desire, but that any one in the Liberal interest can do more than give him a tittle annoyance, and force him to descend and contest the county, is already a foregone conclusion. His popularity in the county has been established beyond cavil. In 1874, he ran for the Commons as an Independent, and the Hon. Mr. Letellier, then leader of the Liberal party, brought out another candidate against him. In 1875 and 1877 his motto was "country and county before party." At the last election he was returned, not on a question of party, but as a man whose worth was known and appreciated in Gaspe then, as it is now in the Province. In fact, the disaster which has befallen all the gentlemen who opposed him on the several occasions of his public advent before the electors, have completely paralysed and crushed the Liberal party in Gaspe. His present consistent and statesmanlike conduct has disabled the party from ever making more than the slightest attempt to contend against the paramount and legitimate influence which he wields there. Hov. Mr. Flynn's county is so situated that he cannot reach it with the same facility and readiness as other hon. gentlemen; if such was the case, and if the necessity existed, his constituents would be cheered with his presence, and the explanation which the malcontents, if there are any such exist, might be desirous of hearing, would be most satisfactorily given. There are those outside of his county, in the party with whom he voted but never belonged, who style him traitor and cast vile epithets upon him. Those alone whose liberalism is centered in selfishness, and feed upon its inherent rottenness, are they who thus cry out when they see the soaring eagle with outstretched pinions disdainfully swoop past their vulture feast. If the occasion arises at Levis or elsewhere, the hon. gentleman will be only too eager to publish to the world the footing upon which he stood with the party, and, if his explanations don't make them hang their heads with shame, they are totally bereft of it .-- Quebec Telegram.

Warlike Counsels.

ROME, November 5.-General Mozzacapo, the author of the anti-Austrian pamphlet, has been appointed commander of the 7th corps. He has just published another article, insisting that the amount spent on the army is insufficient, and saying it is only by a powerful army and great armament that Italy can hope to raise her voice higher in the councils of the nations.

AFGHANISTAN AND RUSSIA. Probable Complications. BERLIN, November 5 .- The National Gazette,

of this city, says that papers have been discovered at Cabul that seriously compromise the Russian Government in connection with he late trouble

[']Epps's COOOA-GRATEFUL AND CONFORTING. -"By a thorough knowledge of the natural laws which govern the operations of digesilon and nutrition, and by a careful application of the fine properties of well selected cocea, Mr. Epps has provided our breakfast tables with a delicately flavored beverage which may save us many heavy doctors' bills. 'It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever these is a weak point. 'We may escape many a fatal shaft by keeping our-selves well fortified with pure blood and a perly nourished frame.''-Civil Service Gazette: Sold only in packets labelled-"JARES EPPS & Co., Homceopathic Chemists, London, England,

and the second secon

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Legal. 1. Bar CANADA, PROVINCE OF QUEBEC

CANADA, PROVINCE OF QUEBEC District of Montreal. Superior Court. De Marcebue Meloohe, of the City and District of Montreal, wife commune en biene of Joseph Alphonse Hudon, of the same place, trader, and duly authorized a ester en justice; Plaintiff; and the said Joseph Alphonse Hudon, of the same place, trader, Defendant. An action en separation de biens has been in-stituted in this cause, on the twenty eighth day of October instant.

stituted in this case. October instant. Montreal, 31st October, 1879. PERRAS & MORIN, Attorneys for Plaintiff. 18-d

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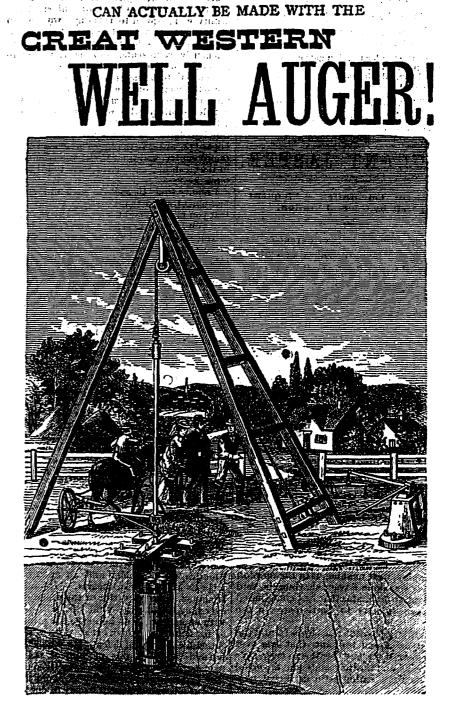
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They are WARRANTED TO BORE SUCCESSFULLY IN ALL KINDS OF EARTH, SOFT SAND and LIMESTONE; BITUMI-NOUS STONE COAL, SLATE, and HARDPAN, and make the BEST

wealth Other constituents of his soil are removed in Other constituents of his soll are removed in the crops and in the animal products sold, but they are such as are usually contained by the soll in larger quantities, or as may be cheaply procured from other sources, and they are rarely removed to a sufficient extent to cause an im-poverishment of the land. The elements spoken of above, as well as lime and other mineral manures, will be more fully treated in the chapter on Manures; but I desire, at the outset of my work, to call especial atten-tion to the characteristics and uses of these three cardinal elements.

Nitrogen.

Nitrogen: Nitrogen is an element not only of all plants, but of every part of the plant. Root, stem, branch, and leaves, at some period of their growth, contain it in every minutest part of their structure. Its quantity, in comparison with the other elements, is extremely small; but, in vegetable growth, the importance of any consti-tuent of the lissues is not to be measured by its quantity. It may play the smallest possible part in the building up of the plant, but so much of it as is necessary must be at the right spot at the right time. If the sap lacks the atom of nitrogen that is required, all the other atoms in the sap go for nothing. It generally forms from 10 to 40 parts of every 1,00 parts of the dry weight of the whole plant -by far the largest proportion being lodged in the grain. The experiments of Boussingault showed that

The experiments of Boussingault showed that 1,000 bis. of each of the following articles contain the amont of birrogen stated in the table. (The substances were thoroughly dried at a high tem-

Wheat	lbs.
Wheat Straw4	
Rye	
Rye Straw	
Oats	*
Oats Straw 4	
Peas	
Peas Straw	
Potatoes15	
Beets	
Tarnips	
Requiover may	

that is always available. With introgen the case is different Although it exists in the atmos-phere in the form most useful to vegetation,— that of ammonia and nitric acid,—the plant cannot usually obtain its supply through the leaves, but it must find its way into the soil and enter the roots with the water what goes to form the see. the sap.

the sap. Ammonia and nitric acid are the universal sources of the supply of nitrogen to vegeta ion. Annmonia is a gas f. mmed during the decomposi-tion of vegetable and animal matters. These all contain nitrogen, and when they are destroyed,

• As in the case of some minerals in the soil, I make no account in this connection of nitric acid, nor of the many gasons results of vege table and animal decomposition, as I desire to state the leading principle of growth in the sim-plest form possible. Ss far as these gases are definitely know to have an influnce on vegetation, they need in no way effect the practices of the farmer. The word "ammonia" is used here (in accordance with a common though not strictly scientific usage) to designate those nitrogenous com-pounds which under certain circumstance may assume the form of ammonia.

Colman's Genuine Mustard. Users of this article may just as well buy the best. This is the only pure brand in the market, all others being what is called "Mustard Condiments," that is mustard mixed with farnia etc.,-and do not possess the pungent aromatic flavour of the genuine article-Be sure you get "Colman's" with the Bull's Head on every 11.G tin.

The Ottawa "Herald."

The following is the copy of a letter referred o in our telegram of yesterday :---EDITOR CITIZEN :

Sin,-The following letter not having appeared in the paper to which it was addressed, would you kindly give it insertion, and oblige

Your humble servant, † J. THOMAS, Bishop of Ottawa.

To the Editor of the Herald :

Sin,-Will you allow me space in your paper to make the following statement :-Many Roman Catholics are under the impression that the Herald is a Catholic paper, and that it has my approbation. Now, sir, though I would very much like to give proper encouragement to a Catholic paper in the Eng-lish language, I must say there is none in Ottawa, and that the Herald has not my approbation, and cannot have it so long as it will be conducted in the manner and in the spirit it has been, at least during the past few months. The leader in vesterday's issue is ample proof of what I have just said. Thanking you for inserting the above,

1 remain, sir, Your obedient servant, † J. THOMAS, Bishop of Ottawa-

Ottawa, November 4th, 1879.

PULAND.

London, November 6 .- The festival in honor of the Polish writer Kraszeviski is over, and it may be said to mark an epoch in the national life of the Peles. Before the festival there were some who feared there would be some excitement, some indiscreet manifestations, caused by the reminiscences which would be awakened by the ancient monuments of the Polish Kings. The importance of the festival as a triumph of the Polish spirit and Polish literature over the bonds which fetter them in Russian Polaud and the protection and encouragement given to the intellectual life of Poles in Austria, would, it was thought, naturally elicit some strong expressions of political feeling. Nothing of the kind, however, actually occurred. The speeches made on the occasion only expressed the joy and pride of the Polish nation at the possession of a writer who, in talent and fertility, is not surpassed by any foreigner. A slight discord in the general harmony was produced by a guest from St. Petersburg, the famous Polish advocate Spazzovitch, who pleaded for a union of all the Slavs-a Panslavist sentiment which excited general disapprobation. As a fitting conclusion to the festival, several collections were made for national objects, such as the maintenance of the Polish Theatre in Posen, the erection ot a monument to the great Polish poet Mickielricz, and so on. The celebrated these pills driven out of the system. Polish painter Siemirazzki presented to the pensia and its ailments cannot exis city of Cracow, on the occasion, his well. Herrick's pills.

LONDON, November 4.--- A despatch from Simla says more buried treasure has been discovered at Cabul.

Excitement in Turkey. LONDON, November 5 .- Considerable excitement in Stamboul on account of the ex pected arrival of the British squadron. The Porte having received no official explanations has telegraphed the Turkish Ambassador at London to ask Salsbury for information.

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For impaired indigestion, and in fact, for debility from any cause, I know of nothing equal to Fellow's Hypophosphites. Its direct effect in strengthening the nervous system renders it suitable for the majority of diseases WM. S. HOWE, M. D., Pittsfield, Me.

PERRY DAVIS' PAIN-KILLER. -- Its effects are almost instantaneous, affording relief from the most intense pain. It southes the irritated or inflamed part, and gives rest an ! quiet to the sufferer. It is eminently the people's friend, and every one should have it with them, or where they can put their hands on it in the dark if need be.

THE PERFUME OF FRESHLYculled flowers is agreeable for every one, and so it is with the delightful fragrance of MURBAY & LANMAN'S FLORIDA WATER. None reject it, none dislike it. From the tropics to the frigid zone, it is the universal favorite on the handkerchief, at the toilet, and in the bath.

BBISTOL'SSARSAPARILLA AND PILLS are the safest and best Purifiers of the blood and humors. They are infallible in their power to cleanse the human body, and where they are used according to directions, there can be no unclean eruptions, no pimples, no blotches, no boils, but instead thereof a clear, smooth, soft skin.

Plam Pudding?

How much the human system can accomplish by care and attention to nature's laws, may be seen in the wondrous feats done by athletes. Among our Southern neighbors an English woman walked 2,700 quarters of a mile in 2,700 quarters of an hour, and came out of the task unscathed. Her coacher insisted on strict obedience to nature's laws. How little will overturn the health, prostrate the man and beat the life out of him, may be seen in the tottering gait of friends, who a short time ago were stalwart. One carouse opens the door for many ailments, and now they find there was uncertainty through life. Obscience to law is always best. It may be pleasant to eat that nice piece of plumpudding which is bl-zing with spirit fire, as It comes from the kitchen to grace the close of the feast. Perchance in that piece of pudding are the seeds of many ailments for many days. Planted in the stomach it rebels, and will not yield. Recourse must then be had to DR. HERRICK'S SCGAR COATED PILLS to expel the traitor. Mauy a mouthful of plum pudding or other unnecessary delicacy have D78nensia and its ailments cannot exist with