

The following abstract will show the state of the Bank for the close of the year —

BANK OF ENGLAND.

An account pursuant to the Act 7th and 8th Victoria, cap 22, for the week ending on Saturday, the 21st day of December, 1861.

Issue Department	
Notes issued	£ 30,741,280
Government Debt	11,015,100
Other Securities	2,781,200
Gold coin	15,710,708
Silver Bullion	35,473
	£30,741,280
Banking Department.	
Proprietors' Capital	£ 11,500,000
Reserve	2,130,000
Public Deposits (including the year's Advances)	13,221,277
Bankers' Comm- cations of National Debt, and Divi- dend Accounts	9,570,115
Other Deposits	9,241,331
Seven-day and other Bills	1,017,231
	£37,633,356

The Scotch Banks have no monopoly of privileges similar to the Bank of England. The Bank of Scotland was established in 1695, with an original capital of £1 000 000 Scots, or £100 000 sterling. It now amounts to £1,500,000 sterling. The Royal Bank of Scotland was chartered in 1727, with a capital of £150,000, which has since been increased to £200,000.

E. B.—D F.—AGRICULTURE.—W. S.—CURIOSITY.—W. Mc. Received.

Literary Notices.

CANADA. PAST, PRESENT, AND FUTURE. Toronto, T. Maclear.

This is the eighth part of Mr. Maclear's very excellent work. It contains a map of the Counties of Hastings, Frontenac, Lennox and Addington. We need not here speak of the merits of this work. It has been warmly received by the entire press of the Province, and will be found an admirable text book, for reference as to the extent, appearance, and resources of the country. It is very carefully got up, and the various descriptions given, having been made after a personal survey of the different localities, by the author of the work, they may be fully relied on. We trust the publisher will meet that success, in the disposal of his work which his enterprise so justly deserves.

THE PEDLAR'S BOY, OR I'LL BE SOMEBODY. Boston, Phillips, Sampson & Co. Toronto, A. H. Armour & Co.

This is another of Uncle Frank's Juvenile treasures, got up in a style similar to the one noticed in last number. The tinted illustrations are very neatly executed. As a specimen of Uncle Frank's style, we give a statement made by him in connexion with the resolution of little Samuel Bissell, which forms the title to the Book, "I'll be Somebody."

"And did he succeed? I should have to get ahead of my story to answer the question. But one thing I will say here, that if a boy makes up his mind, deliberately and firmly, that he will climb up to some high point on the hill of science, and that he will be respected and honoured among his fellows—if he brings his hands and his head and his heart to the task, and goes ahead through thick and thin, not turning out of his path however he may be tempted to do so, he is almost sure to succeed in reaching what he aims at, that is if his life is spared, and his health does not give out. I have great

faith in a strong will, a clear head, right principles, a good stock of patience, and a steady disposition to go ahead."

This is a very beautiful extract, and worthy to be kept in mind by all our Juvenile readers. Numerous instances might be adduced of the truth of these remarks, and a little scrutiny into the private life of men who have risen to eminence in any profession, will show that this eminence is more to be attributed to calm, determined, indomitable perseverance, than to any superior natural mental qualifications with which they were endowed.

Agriculture.

FUNGI—AS A PARASITE.

The fungi next in order are different from puccinia, still I have no doubt it has a near alliance with it, which can be easily observed by viewing the uredo separately. Uredines, the plural of uredo from the Latin *ureo*, (to burn,) because it discolours the parts attacked by a burnt appearance; are chiefly found on the young or old leaves of cereals, but seldom on the stems. The uredo has been known to exist on the wheat plants in all its stages of growth; early in the spring it will be found in the glumes and paleæ of the ear, after the grain is formed. There are two kinds of uredines, one resembling an orange, the other of a yellow colour. *Uredo linearis* having oblong spores, the other, *uredo rubigo*, (red dust,) having its spores nearly spherical—these are closely allied to the red dust on the leaves of the rose-tree. (*uredo roseæ*.) they belong to the order of conio-mycetes, or dusty fungus. Farmers usually call it "red-gum," "red-dust," &c. To see the form of the spores of this fungi requires a very high power of the microscope, and must be viewed as an opaque object. Botanists are of opinion that they are imperfect forms of minute fungi; that in their perfect state they are known by other names. Corn-fields have been seen to droop under the influence of this parasite, causing a sickly aspect, often creating serious alarm, however, a few bright warm days dissipate this evil, the heat of the sun drying up the superfluous moisture, the fungus cannot spread and, health returns. Unquestionably, it passes off in the way described, more easily than any other; but when the beneficial influence of sunshine is not effectually exerted a deterioration of the crop takes place. When it is found in later stages of growth, and on the glumes and paleæ of the chaff, it is more injurious than when it merely appears in the earlier period of growth.

An astonishing mould, called *Chomyphæ*, appears during snow, first discovered in Iceland by Thieneman; also, two species in the neighbourhood of Dresden, very abundant, it melts by the heat of the sun without a general thaw, its reproductive portion is sometimes red and green, it will be afterwards found in the stratum of the young plants, resembling a cobweb of great delicacy. It is ascertained that it is due to the existence of animal matter in the soil. There is still another as developed beneath the snow, called by Unger, *Lanosa Nivalis*, unlike the last, being excessively injurious to both grass and corn; it appears in "white patches of a foot or more in diameter, tinging the snow with a red hue, arising from the spores of the fungus, which are of this colour." On viewing the spot where this fungus has been I found it completely withered wherever it had run its course. It is not known in England, and happily for them such is the case, it being discovered to be one of the most destructive parasites to barley and rye. The *Uredo Segetum*, more minute than any of those formerly noticed, reduces the ears of wheat and barley to a mass of black sooty powder. Inexperienced farmers, as usual, call it by a variety of names, such as "smut" "dust brand," "burnt ear," &c.—adhering by a gummy substance, the black dust forming the spores, which are extremely small, in

this case the ear is completely ruined. A botanical writer says that the "one hundred and sixty thousandth part of a square inch will contain forty-nine of them," another calculates "that no less than seven millions eight hundred and forty thousand would be required to cover a square inch, English measure." This fungus is rarely found on any other part of the plant—the ear being its chief location. Some seasons they may be seen during summer in immense quantities long before the rest of the grain comes to maturity, its spores being scattered to the winds for weeks before reaping begins, the farmer scarcely sees it during harvest, and therefore thinks but very little about it.

The *Uredo fastida*, or stinking rust, so called from its most disgusting odour, which may be easily perceived in passing through the field where it prevails. Or if an ear be broken in your hands the smell is intolerable, resembling the stench of putrid fish, and cannot be easily removed from the fingers. Unless the precautions hereafter pointed out are taken to prevent it, no field will be free from its encroachments—being injurious in every degree. It confines its ravages to the grain, completely filling the seeds, replacing the flour by a black disgusting sooty powder. Botanists are of opinion that this fungus enters by the spongloles of the roots of the plant, and propelled through the tissues by the ascending sap, enters the young ovum to vegetate, when there all fecundation is destroyed by it, there being no development of the parts as the fructification swells, no embryo can be detected. The grain is well on—the harvest is cut, and 'tis after the farmer has gone through the cleansing of the grain that he discovers the disease.

M Basot, an Arifal botanist, in showing the progress of this parasite very properly remarks—"The earliest period at which I discovered the parasite within the cavity of the *oreole* of the young plant of wheat (the seed grain of which had been inoculated with the fungi of the *uredo fastida*, and sown the 14th November, 1805), was the 6th of June, 1806, being sixteen days before the ear emerged from its hose, and about twenty days before the sound ears, springing from the same root, were in bloom. At that early stage the inner cavity of the ovum is very small, and, after fecundation is filled with the albumen or farinaceous substance of the seed, and already occupied by many young fungi, which from their jelly-like root or spawn adhere to the membrane which lines the cavity, and from which they can be easily detached in small flakes with that spawn. In that state their very small pedicels may be distinctly seen. At first the fungi are of a pure white colour; and when the ear emerges from its hose the ovum is much enlarged, but still retains its original shape; and the fungi rapidly multiplying many of them have then nearly come to maturity, assuming a darker color; and having separated from the spawn lie loose in the cavity of the ovum. The infected grains continue growing, and the fungi continue to multiply till the sound grains have attained their full size and maturity, when the infected grains are easily distinguished from the sound ones by their being generally larger, and of a darker green color."

The encroachment of this fungus will be prevented by merely cleansing the wheat about to be sown from all "bunt" which may have attached itself to it, on account of its unctuous character being of a greasy oily nature, consequently adhering to the skin of the healthy grains, causing inoculation in this instance. Here chemistry comes to the aid of farmers. "An alkali converts oil into soap, and this is the basis of all effectual dressing, as it is called, of the seed corn." Lime has often been resorted to on account of its alkaline properties, but by slaking it too much such properties are destroyed. Common potash, substances containing ammonia, even the excrements of animals have been adopted for remedies. Brine has also been employed, sulphate of copper, and arsenic; articles not possessing alkaline qualities. My opinion is that the two last mentioned, especially the arsenic, are undesirable