

RATES OF ADVERTISING.

Half Square one ins.	\$0.50
Square	1.00
Half Column	2.00
Column	3.00

All advertisements not having the number of insertions specified in the manuscript will be continued and charged for accordingly.

In order to insure insertion, advertisements should be in the office not later than Monday morning.

Local and other Matters.

The Railway Wharf repairs are nearly completed.

ACADIA.—The Juniors, Sophomores and Freshmen left for home this week.

SMELTS.—Smelts have struck in thick this spring and some splendid hauls are reported on the Gaspereau.

RELIGIOUS.—Mr. Ferry from the Theological Hall, Halifax, occupied the Presbyterian pulpit last Sunday.

PERSONAL.—Mr. G. Thos. Moore, Q. C., of the firm of Moore & Pyke, Barristers of Liverpool was in Wolfville this week.

ROADS.—We notice that the hole just east of this office, also the bridge in Willow Hollow, and the bridge near Jos. Jones's have been repaired.

SEEDS.—We would call the attention of our readers to Mr. G. V. Rand's adv. of Garden and Flower Seeds. Mr. Rand's seeds are too well known to require any puffing.

RELIGIOUS.—Rev T. A. Higgins administered the ordinance of baptism to 8 more candidates on Sunday evening at the Baptist Church. This makes 65 baptised since April 13th 1884.

D. A. Munro, Manufacturer of Doors Sashes and Mouldings of every description for house finishing. Having fitted up my shop with new machinery for the above business and using kiln-dried stock I am able to give satisfaction to persons favoring me with their orders. Wolfville, April 17th '84 6 mos.

B. G. Bishop wishes to remind his friends and the public generally that he is prepared to carry on Painting in all its branches more extensively than ever. Send in your orders at once for Decorating, Paper-hanging, Tinting, Whitening &c. Agent for latest styles of American and English Room Papers, and the celebrated Rubber Paint. Wolfville, April 11th. 4 ins.

The Grand Division meets at Grand Pre next week commencing on Monday. On Wednesday evening meetings will be held in Wolfville and Grand Pre. Representatives from the Grand Division will address these meetings and music will be provided by the local Divisions. Notice will be given of the place where the meeting will be held here.

NO. 2.

LECTURES ON

Chemical Fertilizers

Delivered at the Experimental Farm, Vincennes, France, by

PROF. GEO. VILLE.

FURNISHED BY

JACK & BELL, Halifax, N. S.

If we make as exact a study of each mineral element as we now do of the whole, we will arrive at an analogous conclusion, to find that by a species of election each of these elements centres by preference in a certain set of organs. Thus we find more silica, lime, oxide of iron, sulphates and chlorides in the stem and leaves than in the fruit and seed, where, on the contrary, sulphuric acid, potash and magnesia become the predominant elements.

Take wheat for example. In the ashes of the seed there is 46 percent of phosphoric acid, in the chaff, 2.54, in the straw 2.26, and only 1.70 in the roots.

What I have just said of phosphoric acid is equally true of magnesia and potash, the proportions of which change from one organ to another, as will be seen by the following table:

	In 100 parts of ashes of		
	Roots.	Straw.	Seed.
Phosphoric acid	1.70	2.20	46.00.
Magnesia	1.97	3.92	13.77.
Potash	2.87	15.18	32.59.
Lime	0.88	3.00	1.19.

The differences here found in wheat exist in all plants without exception. Thus, the distribution of minerals is not left to chance, but is subject to fixed laws; all aid in the general structure of the plant, but each centres in a fixed organ or system of organs. We will now find the cause of this unequal distribution. In the economy of living beings all the functions, varied as they are, tend to one end—viz., the production of the species for all time. They are ordered with a view to this important result. But to gain this object, the embryo contained in the seed must have within its reach all those minerals necessary to the first acts of vegetable life. Hence, the seed is so abundantly supplied with phosphoric acid, potash and magnesia. It is a kind of reserve laid by for the first movements of the embryo.

If you carefully read the preceding table, you will be struck by the contrast between the potash and the phosphoric acid.

Phosphoric acid is pretty uniformly distributed through the organs, the seed excepted. Not so with potash. The concentration of phosphoric acid in the seed is sudden; the proportions of potash increase by degrees, and, you will observe, in proportion as the organ nears the seed. Why this sudden increase on the one side and gradual progress on the other?

An old remark of Theodore de Saussure informs us:

The phosphates of lime and magnesia are insoluble in water; but there is a double phosphate of potash and lime, and a double phosphate of potash and magnesia, both of which are soluble in water.

Potash—or, to speak more exactly,

alkaline-phosphates—favors, if it does not determine, the change of terraqueous phosphates into tissues. Now, at the time the seed forms vegetation is retarded and the organs begin to dry. It is evident, then, that the superabundance of alkaline salts must favor the passage of terraqueous phosphates; therefore, the nearer the seed the greater the quantity of potash, and consequent increase of terraqueous phosphates. Let us look, now, to the distribution of the organic elements. Here a fact strikes us. These elements, four in number, represent at least ninety-five per cent of vegetable matter. Here let me say that although the minerals do not figure largely, we may not from that conclude they are less important than the organic elements. Wanting them, vegetation would be impossible; it would be languishing and uncertain if the soil were not sufficiently supplied with them. In their distribution through vegetation the organic elements present another contrast to the mineral element; three of them—carbon, hydrogen and oxygen—are exhibited in almost unvarying proportions. All plants and all organs, without distinction, contain the same quantities of these. Trees, shrubs, simple plants, roots, stems, barks, branches, leaves, fruits and seeds maintain an invariable balance in proportions of carbon, hydrogen, and oxygen.

With azote it is different. We may say of that what has already been said of phosphoric acid—fruits and seeds contain more of it than the other organs, because during germination the embryo lives on the seed, and within its small circumference it must find azote as well as minerals.

In vegetable matter carbon and oxygen are exhibited, each at 40 to 45 per cent, hydrogen from 5 to 6 percent, and azote from 1 to 2 percent.

I have promised to define vegetable composition with exactness and clearness. It seems to me that the preceding data do so.

But it is not enough to know what composes vegetable matter; we must also know how it is formed, and how those elements combine which shape and increase its organs.

Here the process differs at all points from that proper to minerals. If a solution of marine salt is exposed to the sun, as the liquid evaporates crystals are deposited too fine to be seen but with a magnifying glass. Soon, however, their forms become visible, and we can watch their growth from day to day, which we will soon find is governed by a geometrical regularity not to be thrown off.

Here the growth is made by successive and continued deposits of salt, the first crystals being centres of attraction for the molecules of sugar and salt diffused through the liquid.

The work of vegetable growth is not so simple, though the phases through which a vegetable passes before its full development have a character of fixedness and persistency which excludes all idea of chance and whim. The laws governing it are not less inflexible than those governing minerals, and their principles and details are equally well known.

JOB PRINTING of all kinds at this office.

ROCKWELL & Co
IMPORTERS AND DEALERS IN

PIANOS,
ORGANS,

AND

Musical Merchandise,

BOOKS,
STATIONERY,

And a variety of Fancy Articles.

—COMPRISING—

Photo, Autograph & Scrap Albums
Scrap Pictures, Writing Desks, Work
Boxes, Jewel Cases, Wallets, Photo.
Frames, a choice selection of Xmas
Cards, Dolls and children's Toys in
variety, a few Vols. Poems, also fine
German Accordians, etc. etc. etc.

ALSO

Agents for the Celebrated "BOSTON"
Sewing Machine, and findings for all
the leading machines in use.

ROOM PAPER!

Just received, a large and well as-
sorted stock of Room Paper, personally
selected from a great variety of samples.

As this is our first importation in
this line, customers will be sure they
are not buying old stock.

Rockwell & Co.

Main St., Wolfville.

N. B.—Butter and Eggs taken in
exchange.

We have also a fine assortment of
Easter and Birthday Cards.

CALDWELL & MURRAY

This Space is reserved for