

at 80c; No. 3 red, 1 car at 82c, 4 cars at 83c, 7 cars at 85c, 1 car at 85½c, 1 car at 88c, 1 car fancy at 90½c, 1 car at 90¾c, 2 cars at 93c; No. 2 red, 1 car at 93½c, 3 cars choice at 95c.

Spring Wheat—Free on Board, Switched and Delivered—No. 3, 2 cars hard variety at 91c, 1 car at 92c, 1 car fancy at 95c.

Corn—In Store and to Go to Store—No. 2 and No. 2 yellow, 6 cars at 34½c, 11,000 bu and 52 cars at 34¾c; No. 3, 2 cars at 31c, 2 cars special location at 31¾c, 9 cars do at 32c, 30,000 bu May at 31¾c; No. 3 yellow, 13 cars at 31½c, 6 cars in special location at 32c. By Sample to Go to Store and Special Bin—No. 3, 9 cars at 32½c; No. 3 yellow, 7 cars at 32½c, 1 car at 32¾c. On Track—No. 4, 1 car at 30¾c, 7 cars at 30½c; No. 3, 9 cars at 31½c, 11 cars choice Nebraska at 32c; No. 3 yellow, 1 car at 32½c, 2 cars Nebraska at 33c, 2 cars choice at 33½c; No. 3 white, 2 cars at 32c, 1 car at 32½c; ears, 1 car at 30c, 1 car at 31c. Free on Board and Switched—No grade, 1 car at 29½c; No. 4, 15 cars at 30½c, 1 car choice at 31c, 1 car billed through at 28c, 9 cars at 28½c, 6 cars choice at 29c; No. 3, 2 cars at 31c, 3 cars at 31½c, 2 cars choice Nebraska at 33c, 40 cars billed through at 29½c, 1 car at 29¾c; No. 3 yellow, 2 cars at 31¾c, 1 car at 32½c, 1 car Nebraska at 33½c, 3 cars billed through at 29½c, 12 cars at 29¾c, 1 car at 29¾c, 11 cars at 30c, 2 cars at 30½c, 1 car country point at 31c; No. 3 white, 2 cars billed through at 29¾c.

Oats—In Store and to Go to Store—No. 2, 3 cars at 24½c, 1 car at 24¾c. On Track—No. 3, 1 car at 23c, 2 cars white at 24c; No. 3 white, 1 car at 25c, 1 car at 25½c, 2 cars choice at 26c, 4 cars at 26½c, 2 cars choice heavy at 26½c, 2 cars at 27c, 1 car barley-oats at 27½c, 3 cars fancy at 28c; No. 2, 2 cars at 24½c, 1 car at 24½c, 2 cars choice at 24¾c, 5 cars at 25c, 4 cars light at 25½c; No. 2 white, 1 car choice at 28c, 1 car at 28¾c. Free on Board—No. 3, 1 car poor at 20c, 1 car at 21½c, 2 cars at 22c, 1 car at 22¾c, 2 cars at 22¾c, 1 car choice at 23¾c, 13 cars (part white) at 23c, 3 cars at 23½c, 3 cars choice white at 24c; No. 3 white, 6 cars at 24c, 2 cars at 24½c, 19 cars at 25c, 1 car at 25½c, 11 cars at 25½c, 2 cars choice heavy at 26c, 2 cars at 26½c, 1 car barley-oats at 27c, 3 cars at 27½c, 3 cars at 27¾c, 6 cars choice at 27½c, 1 car fancy at 28c, 5 cars (billed through) at 25½c, 1 car at 25¾c, 1 car at 26c, 3 cars at 26½c; No. 2, 1 car at 24½c, 1 car (billed through) at 23¾c.

Rye—In Store—1 car at 48c. Free on Board or Switched—No. 3, 1 car at 40c, 1 car at 41c; No. 2, 1 car at 44c.

Barley—On Track—Screenings, 1 car at \$8.50 per ton. Free on Board or Switched—No. 5, 1 car at 30c; No. 4, 1 car at 27c, 1 car at 29c, 3 cars at 30c, 1 car at 40c; No. 3, 1 car at 32c, 1 car at 34c, 1 car at 50c, 1 car at 54c, 1 car at 60c, 1 car at 63c. To Arrive—Not graded, 1 car at 52c, 4 cars at 62c, 5 cars at 63c, 5 cars at 65c.

Timothy Seed—20 bags at \$1.15, 12 bags at \$1.20, 98, 70, and 2 bags at \$1.25, 230 bags at \$1.27½, 67 bags at \$1.28, 199 and 29 bags at \$1.30, 220, 200, 174, 143, and 120 bags at \$1.33, 258, 220, 200, and 8 bags at \$1.35, 210 bags at \$1.36, 336 and 282 bags at \$1.37, 207 bags—readjusted—at \$1.43, 21 bags at \$1.45. Future Delivery—March, 4 cars at \$1.38, 1 car at \$1.39. April, 1 car at \$1.38.

Flaxseed—On Track—No. 1, 2 cars at \$1.55. **Clover Seed**—5 bags at \$3.60, 10 bags at \$4.55, 80 bags at \$4.60, 11 bags at \$4.85, 70 bags at \$4.90, 1 car at \$4.95, 6 bags at \$5; Mammoth, 18 bags at \$5.10. Future Delivery—March, 1 car at \$4.95; October, new, 1 car at \$4.60.

German Millet Seed—36 bags at 35c, 1 car delivered at 33¾c.

Hungarian and Millet Seeds—1 car mixed at 30c for millet and 45c for Hungarian.

Clear Pork—100 brls on p. t.

Lard—100 tcs at \$6.85.

Green Hams—12,500 lbs av 12 lbs at 9½c, 25,000 lbs av 16 lbs at 8½c, 25,000 lbs av 20 lbs at 7¾c.

Long Cut Hams—50 boxes on p. t.

Dry Salted Shoulders—25,000 lbs on p. t., 100 boxes on p. t.

Short Clear Sides—50 boxes on p. t.

Hay—On Track—No. 1 timothy, 2 cars at \$10, 1 car at \$10.25, 1 car at \$10.50, 1 car choice at \$10.75, 2 cars at \$11; No. 2, 1 car at \$9.10, not graded, 1 car at \$10.25; upland prairie, 2 cars Iowa, hot, at \$4, 2 cars good at \$5.2 cars at \$5.50, 3 cars choice at \$6, 3 cars at \$6.25, 11 cars at \$6.50, 1 car very choice at \$6.75, 1 car at \$7, 1 car Dakota at \$6.50. Free on Board and Switched—No. 1 timothy, 3 cars at \$10; 2 cars at \$10.25, 3 cars at \$10.50, 4 cars at \$10.75, 1 car prime at \$11.25; No. 2, 1 car at \$9, 1 car at \$9.50, 2 cars choice at \$10; mixed, 1 car at \$8.50; upland prairie, part car Iowa at \$5.75, 1 car at \$6, 4 cars choice at \$6.50.

Straw—1 car oat at \$5 free on board, 1 car rye at \$7 on track.

PRODUCE MOVEMENTS.

The following were the receipts and shipments of flour, grain, and produce for the past twenty-four hours, as compared with the same time last year:

ARTICLES.	RECEIPTS.		SHIPMENTS.	
	1889.	1888.	1889.	1888.
Flour, bris.....	7,799	20,457	7,769	21,022
Wheat, bu.....	52,664	27,938	19,625	6,867
Corn, bu.....	186,383	220,596	85,586	110,454
Oats, bu.....	63,524	121,814	68,864	59,722
Rye, bu.....	2,250	1,070	8,087	1,572
Barley, bu.....	26,134	25,540	24,850	11,949
Grass seed, lbs.	159,776	189,808	509,617	269,294
Flaxseed, bu.....	986	2,105	974	2,543
Broom corn, lbs	31,060	25,900	50,356	40,248
C. meats, lbs....	433,950	491,060	1,961,391	1,789,799
D. beef, lbs.....	49,490	61,600	3,013	747
Beef, tcs.....	.....	.....	.....	.....
Pork, bris.....	.....	.....	.....	.....
Lard, lbs.....	367,850	148	923	1
D. hogs, No.....	122	134,500	1,224,790	792,085
Live hogs, No....	20,351	33	17	485
Cattle, No.....	8,692	19,323	6,557	6,797
Sheep, No.....	6,024	11,058	4,708	4,670
Hides, lbs.....	318,058	279,035	593,570	548
Wool, lbs.....	1,790	1,580	593,570	580,150
Coal, tons.....	7,348	10,759	22,507	50,210
Lumber, M.....	1,002	1,958	1,595	1,592
Shingles, M.....	138	429	1,968	3,262
Salt, bris.....	4,109	13,549	8,880	1,968
Hay, tons.....	653	552	206	24
Poultry, lbs....	17,473	15,290	15,285	8,850
Poultry, coops.	615	.....	.....	.....
Game, pkgs.....	.....	.....	.....	.....
Eggs, pkgs.....	1,364	1,311	366	258
Butter, lbs.....	290,929	182,753	345,498	177,700
Cheese, lbs.....	151,551	53,760	114,220	\$1.6
D. fruits, lbs....	53,478	55,190	57,040	772
G. apples, bris..	1,368	542	637	53,730
Potatoes, bu....	1,250	10,070	637	68
.....	.....	.....	209	2,106

Withdrawn from Store for City Consumption—Corn, 764 bu; oats, 1,125 bu; barley, 3,734 bu.

The following is an exhibit of the inspection of grain received in the city during the past twenty-four hours by car-loads:

ARTICLES.	Cont'd grades.		Low grades.		Total.
	No. 3.	grades.	No. 3.	grades.	
Winter wheat.....	101	26	13	1	40
Spring wheat.....	12	1	1	10	23
Corn.....	74	223	47	47	344
Oats.....	26	82	.....	.....	108
Rye.....	1	1	.....	.....	2
Barley.....	14	10	.....	.....	19
Total.....	139	330	67	.....	536

Withdrawn from Store—2,853 bu winter wheat, 90,500 bu spring wheat, 9,544 bu corn, 1,323 bu over

I was not glad to get back.

NEW SPECIES OF PROTOSALVINIA.

The Possible Source of the Irregular Natural Gas Supply in Chicago.

The following paper, by B. W. Thomas, was read before the Chicago Academy of Sciences Tuesday evening:

In calling the attention of the Academy to supposed new species of Protosalvinia of Dawson or to some closely allied fossil plants, and in claiming the Protosalvinia as the source of the small and irregular supply of natural gas occasionally met with in this vicinity it may be well briefly to refer to previous investigations in relation to these fossils.

Sir William Dawson states that the "macrospores, which are so abundant in the shale boulders, and in the boulder clay of this vicinity are the organs of fructification of cryptogams of the Devonian period. These minute organisms were first observed by Dr. H. A. Johnson and the writer in the boulder clay through which the first lake tunnel to supply the city with water was being constructed under the lake in 1865 and 1866. We could not at that time identify them, and they were not recognized by any paleontologist of New York or London to whom we submitted them. In fact they were new and unknown to science.

In a paper published in the *American Journal of Science* in 1871, Dawson describes these "curious little bodies," and gave them the name of Sporangiites Huronensis, and he now regards them as the macrospores of a marine plant that he calls "Protosalvinia," belonging to the order Rhizocarpeae. He first found them in specimens of Upper Devonian shale sent to him from Kettle Point, Lake Huron, in 1869, by Sir W. E. Logan.

At the meeting of the American Association in 1882, Professor Edward Orton, State Geologist of Ohio, in a paper entitled "A Source of the Bituminous Matter in the Black (Devonian) Shale of Ohio," states that these shales are of marine origin, and carry from 8 to 22 per cent of organic matter, and that it is this organic matter to which they owe their character of oil and gas producing shale. A ton of these shales is made to yield in our reforts from ten to twenty gallons of oil, and that a line of oil and gas springs mark the outcrop of these formations throughout their whole extent, and that these "Macrospores" compose a very large per cent of this organic matter in the shales, from bottom to top, in many places over 1,000 feet thick, and in varying widths of ten to twenty miles and extending from Lake Erie to the Ohio River. In a "report" just issued—"Economic Geology of Ohio"—Professor Orton in the leading paper on "Petroleum and Natural Gas," after referring to other organisms in the oil and gas-bearing shale, says: "But other organisms are of small account so far as quantity is concerned when compared with certain microscopic fossils which are accumulated in large amount throughout the black beds of the entire shale formation, composing sometimes a notable percentage of the substance of the rock, and apparently giving origin to an important extent to the bituminous character of the beds. They were first discovered in fragments of black shale and in the bowlder clay at Chicago." (Dawson states in academy bulletin, No. 9, that Sir W. E. Logan mentioned "Microscopic orbicular bodies" in shale in 1863.)

When sinking the shore shaft of the new lake tunnel, now being constructed, at a depth of about eighty feet a "pocket" of quicksand was reached and an attempt was made to get it out of the way by pumping it into the lake. When it reached the water a thick, black scum arose from it and floated off on the surface in large quantities. Some of this oily looking material was collected by President Andrews, and has been shown at meetings of the academy. Through the kindness of B. Feind, Esq., Engineer in charge of the construction of the new tunnel, I have been enabled to prepare specimens of it and examine it under the microscope, when, as I supposed it was, it proved to be almost pure Macrospores of Protosalvinia Huronensis of Dawson, tons of which must have been pumped into the lake.

As we well know that the boulder clay that underlies Chicago and vicinity is literally filled with these oil and gas producing macrospores and fragments of Devonian shale, much of which is over 40 per cent pure oil, and that this large mass of rich material has for unknown centuries been slowly decomposing in it, it is reasonable to suppose that small quantities of "natural gas" would be generated by this decomposition, and collect in the sand and gravel "pockets" in the clay, and be held—at least, in part—by the surrounding wet clay until in some way, by the increased pressure or the disturbing of the clay, the accumulated gas would escape, as has been noticed in several places in this city and vicinity.

Among the many specimens of material from the new tunnel kindly given me by Engineer Feind was one from the present eastern end of the shaft, which was very rich in macrospores—all of which were rare—and some were quite different from any I have before examined. While in the preparat on of other material the contained macrospores will go to the bottom of a beaker of water almost as promptly as the sand, in this collection they appear to be of much less specific gravity and persist in remaining at the top. On placing them under the microscope I found that with the exception of a few that I regard as new species they were all macrospores of Protosalvinia Chicagoensis (see Academy Bulletin No. 9, page 115) and much the best and best preserved specimens I have yet found.

Among the M. Chicagoensis I noticed three other forms that are entirely new to me, and that I do not think have been noted by others. The most numerous of these new forms was one of about two-thirds the size of P. Chicagoensis, with a nearly black center and a wide "old-gold" border. A second specimen was much like P. Huronensis, but fully three times larger. A third and very interesting form has a very dark center with a wide brick-red border, filled with radiating rays. Specimens of these spores are now being examined by Dr. George M. Dawson, Sir William Dawson, and others. A very full history of these Devonian fossils, so far as is now known, has been published by the Academy as Bulletins Nos. 4, 6, and 9. Respectfully submitted,

B. W. THOMAS,

THE COMING NOVELIST.