General Business.

Vegetine.

CONDUCTORS TAKE IT.

Blotches, Pimples, Humors on the Face and Neck Disappear.

A Sovereign Remedy for Rheumatism!

MONTREAL, P. Q., Oct. 17, 1879.

H. R. STEVENS:

Dear Sir—I most cheerfully add my testimonial to the great number you are daily receiving in favor of your VEGETINE. I have been troubled with rheumatism for several years; also with blotches and pimples breaking out upon my face and neck.

A friend recommended VEGETINE, and, after using several bottles, I have had no more trouble with rheumatism, and the blotches on my face and neck have disappeared. I have recommended VEGETINE to some of my friends who were troubled with rheumatism, and they have used it with good success, and I will recommend it to all who are troubled in the same way.

Yours truly, VICTOR PIGEON,
Passenger Conductor Grand Trunk Railroad.

Vegetine.

Dr. Callier Surprised.

VEGETINE CURED HIS DAUGHTER.

CALLIERSVILLE, Chilton Co., Ala., May 15, 1878

Dear Sir—My daughter has been afflicted with nasal catarrh, affection of bladder and kidneys, and is of scrofulous diathesis, and, after having exhausted my skill and the most eminent physicians of Selma, I at last resorted to the use of your VEGETINE (without confidence), and, to my great surprise, my daughter has been restored to health. I write this as a simple act of justice, and not as an advertising medium.

Respectfully, T. E. CALLIER, M. D.

Vegetine

Worked Like a Charm—Cured Salt Rheum and Erysipelas.

75 COURT ST., ROME, N. Y., July 10, 1879.

MR. H. R. STEVENS:

Dear Sir—One year ago last my little boy had a breaking out of Erysipelas and Salt Rheum, his face being one mattered sore of the worst description. Noticing your advertisement in the papers, I purchased two bottles of the VEGETINE, and, with the two bottles my son was cured. I never saw anything like the VEGETINE; it worked like a charm. I have been city watchman at Rome for years. This testimonial is gratuitous.

Yours respectfully, HORATIO GRIDLEY.

Vegetine.

Remarkable Cure of Scrofulous Face.

WESTMINISTER, Conn., June 19, 1879.

MR. H. R. STEVENS:

Dear Sir—I can testify to the good effect of your medicine. My little boy had a Scrofula sore break out on his head as big ae a quarter of a dollar, and it went down his face from one ear to the other, under his neck, and was one solid mass of sores. Two bottles of your valuable VEGETINE completely cured him.

Very respectfully,
MRS. G. R. THATCHER.

VEGETINE

PREPARED BY

H. R. Stevens, Boston, Mass. and Toronto, Ont.

Vegetine is Sold by all Druggists.

HOP BITTERS.

(A Medicine, not a Drink,)

CONTAINS

HOPS, BUCHU, MANDRAKE, DANDELION,

AND THE PUREST AND BEST MEDICAL QUALITIES OF ALL OTHER BITTERS.

THEY CURE

All Diseases of the Stomach, Bowels, Blood, Liver, Kidneys, and Urinary Organs, Nervousness, Sleeplessness and especially Female Complaints.

$1000 IN GOLD.

Will be paid for a case they will not cure or help, or for anything impure or injurious found in them.

Ask your druggist for Hop Bitters and try them before you sleep. **Take no Other.**

D. I. C. is an absolute and irresistible cure for Drunkeness, use of opium, tobacco and narcotics.

SEND FOR CIRCULAR.

All above sold by druggists.
Hop Bitters Mfg. Co., Rochester, N. Y., & Toronto, Ont.

New Leather & Shoe Store.

The Subscriber, having disposed of his tannery, and retired from the business connected therewith, has opened a

Leather, Boot, Shoe and Findings Store

In stock

OLE, UPPER KIPP, CALF INSOLE LEATHER, AND SHOEMAKERS' FINDINGS, BOOTS & SHOES MADE TO ORDER.

ON WATER ST., CHATHAM.

(North side, west the Commercial Building,) where he hopes to receive a fair share of the public patronage hitherto given to him.

Parties having open accounts with the subscriber are requested to call and arrange the same immediately.

☞ Agent for Wilson's Wool Carding Mill, Derby

DUNCAN DAVIDSON.

Chatham, Aug. 24th, 1881.

TIN SHOP.

I have now opened the well known establishment formerly occupied by the late James Gray, and with the kind patronage of former friends, am prepared to execute all work in

TIN,
SHEET-IRON,
GAS-FITTING.

Granite Ware, Japaned Stamped and Plain.

TIN WARE

always on hand, which I will sell low for cash.

PLOUGHS,

Also, a nice assortment of

Parlor and Cooking Stoves,

fitted with PATENT OVENS the inner shells of which draw out for cleaning purposes.

Those wishing to buy cheap would do well to us a call.

☞ *Shop in rear of Custom House.* ☜

A. C. M'LEAN.

Chatham, July 22.

COFFINS & CASKETS

The Subscriber has on hand at his shop, a superior assortment of

ROSEWOOD, WALNUT AND OTHER COFFINS,

which he will sell at reasonable rates.

WM. M'LEAN,

UNDERTAKER.

Chatham, Nov. 1, 1880.

TURBINE WATER WHEEL.

FOR SALE.

ONE new Leffell Turbine Water Wheel—52 inch, with 8 feet of EXTRA SHAFTING, 5 inch diameter, CROWN WHEEL PINION, PILLAR BLOCK, and STEP.

J. B. SNOWBALL.

Chatham, Nov. 1st.

Miramichi Advance.

CHATHAM. - - DECEMBER 29, 1881.

New Brunswick's Lumber Shipments to the United Kingdom, Continent, etc., for 1881.

During the earlier part of this year, which is now practically closed, so far as our lumber shipments are concerned, we had occasion, several times, to state that the lumber trade of the Province, notwithstanding the reports from several quarters to the contrary, would not be as large as that of the previous year. The ADVANCE was considerably berated in connection with the matter, and especially so by the special organ of the Crown Lands Department, which should have been pretty well informed, and by which we were charged with predicting a falling off in lumber production for the purpose of giving a bias to the local labor market. In this matter, as in all others, however, our aim was to be correct, for in connection with an industry employing so large a proportion of our people and so much of the business capital of the country, no good can come, while much harm may result, from incorrect statements going abroad, either through the press, or the more confidential medium of trade circulars. We have just completed our yearly statement of the lumber shipments of New Brunswick to Great Britain, the Continent, Africa and Australia for 1881, and find that there has been a falling off, compared with last year, of over 45,000,000 superficial feet of deals, and some 14,000 tons of timber—a quantity in the item of timber equal to one half the total export of last year—while there has been an appreciable lessening, also, in the shipments of palings and laths.

A noticeable feature of the business is the comparative increase of shipments to the Continent from Miramichi, with a corresponding decrease thereof from St. John, which about preserved the balance of the trade with Great Britain—the main stay of this important industry. The following figures will be of interest to the trade, as well as to many general readers.

Lumber Shipments, by ports, of the Province of New Brunswick to the United Kingdom, the Continent, et ., for the year 1881, compared with the previous year.

Ports.		Tons.	Sup. ft. deals, etc.
Miramichi,	1880	178,871	155,004,559
"	1881	145,565	128,290,875
St. John,	1880	259,944	215,485,000
"	1881	227,828	203,714,000
Richibucto,	1880	23,217	21,372,346
"	1881	17,279	15,541,053
Bathurst,	1880	15,230	13,125,946
"	1881	18,558	16,160,371
Dalhousie,	1880	21,639	15,262,845
"	1881	21,277	15,838,127
Shediac,	1880	12,199	10,917,080
"	1881	15,220	6,953,000
Caraquet,	1880	3,957	3,729,012
"	1881	3,900	3,750,000
Sackville,	1880	3,925	4,037,000
"	1881	3,472	3,380,749

The totals for each year were, 864 vessels, 518,982 tons, 438,933,788 s.f. deals for 1880, against 758 vessels, 453,099 tons, 393,628,175 s. f. deals for 1881, or a falling off, for the present year, of 45,305,613 s. f. deals. In the item of timber, the shipments for 1880 were 28,152 tons against 14,143 for 1881, a falling off of about one half for the present year.

There is a decrease in shipments from five of the eight ports in the trade, Bathurst, Caraquet and Shediac alone showing an increase. Miramichi shows the greatest falling off, her decrease being no less than 27,713,684 s. f. deals of the 45,305,613 for the whole Province; Newcastle, as an individual port of the Miramichi, shows an increase of shipments, so that the whole of the decrease is in Chatham. This is due to the fact that Messrs. R. A. & J. Stewart of Newcastle have increased their shipments this season by over 10,000,000 s. f. and Mr. George McLeod who shipped from Chatham last year, transferred his business to Newcastle this year.

MIRAMICHI.

The Miramichi shipments were made in 281 vessels, the shippers, tonnage and quantities of deals being as follows:—

Shippers.	Tons.	Sup. ft. deals, etc.
R. A. & J. Stewart,	51,715	44,678,902
J. B. Snowball,	26,411	23,383,143
Guy, Bevan & Co.,	25,999	21,767,780
George McLeod,	12,047	11,512,000
Wm. Muirhead,	10,757	10,229,739
Alex. Morrison,	8,207	7,441,000
D. & J. Ritchie & Co.,	7,520	6,759,311
Geo. Burchill & Sons,	2,909	2,519,000
Total,	145,565	128,290,875

The shipments of Palings and Timber from the Miramichi were as follows:

Shippers.	Palings.	Tons Timber. Birch.	Pine
R. A. & J. Stewart,	764,000	452	....
J. B. Snowball,	98,043	129	985
Guy, Bevan & Co.,	2,085,510	..	....
Geo. McLeod,	6,000	..	....
Wm. Muirhead,	84,200	..	....
Alex. Morrison,	11,300	130	130
D. & J. Ritchie & Co.,	87,800	125	92
Geo. Burchill & Sons,	12,000		....
Totals,	3,148,853	836	1207

The above shipments of Deals were distributed as follows—

GREAT BRITAIN.

Ports.	No. of Ves'ls.	Sup. ft. deals, etc.
Ayr	4	1,313,268
Avonmouth	2	898,763
Aberystwith	1	127,000
Bristol	2	779,000
Bowling	6	2,930,769
Birkenhead	1	723,000
Barrow	2	1,262,000
Cardiff	18	7,805,033
Carmarthen	1	177,970
Clyde	3	1,352,042
Fleetwood	1	422,000
Grimsby	6	2,355,119
Glasson Dock	1	509,000
Greenock	1	562,000
Garston Dock	6	982,840
Glasgow	1	1,029,136
Gloucester	8	3,405,939
Hull	3	870,000
Howdon Dock	1	314,000
Irvine	2	844,785
King's Lynn	1	432,000
Liverpool	11	6,122,146
London	19	9,023,087
Lamlash	1	178,000
Mersey	12	5,500,170
Maryport	4	1,774,691
Menia Bridge	1	271,000
Newport	3	1,347,149
Neath	1	202,733
Penarth Roads	6	2,873,436
River Wear	1	301,000
Sharpness	7	3,715,566
Silloth Dock	1	320,000
Swansea	2	613,446
Whitehaven	5	2,239,442
West Hartlepool,	1	574,000
Totals	146	64,151,530

IRELAND.

Ports.	No. V'ls	Sup ft. Deals, etc.
Belfast,	30	16,672,333
Conway,	1	335,000
Dublin,	9	4,325,992
Dundrum,	1	295,301
Kinsale,	1	291,000
Larne,	2	780,000
Londonderry,	4	1,772,000
Newry,	3	1,070,000
Queenstown,	2	1,746,000
Sligo,	1	388,000
Warren Point,	1	497,000
Totals,	55	28,172,626

FRANCE.

Ports.	No. V'ls.	Sup. ft. Deals, etc.
Bordeaux,	11	5,684,342
Brest,	2	850,916
Cette,	2	951,000
Caen,	4	1,470,682
Dieppe,	1	418,420
Honfleur,	1	480,361
Havre,	2	877,340
La Rochelle,	1	415,000
Marseilles,	7	3,551,719
Nice,	2	861,000
Port Vendres,	5	2,146,693
Paimbeuff,	1	321,084
Rochefort,	2	1,130,603
Rouen,	2	814,000
St. Helier,	1	237,000
St. Servan,	2	538,182
St. Nazaire,	4	2,354,613
Seville,	1	317,000
St. Pierre (orders)	2	225,000
Toulon,	1	376,925
Totals,	54	24,021,880

OTHER COUNTRIES AND PORTS.

Ports.	No. V'ls	Sup. ft. Deals, etc.
Australia	2	1,503,709
Africa	9	3,666,264
Belgium	4	1,255,704
Gibraltar (orders)	2	449,671
Holland	1	803,000
Spain	8	4,266,491
Totals,	26	11,944,839
Grand totals,	281	128,290,875

All the timber shipped from Miramichi went to Great Britain and Ireland, with the exception of 14 tons of birch, which went to Holland.

ST. JOHN.

We have made up the St. John Shipments for the year ending Dec. 1st, which has been our practice for several years. The number of cargoes shipped was 299—the vessels in the St. John trade being of a larger class than those coming to Miramichi and other Northern ports. St. John's shipments for the year ending Dec. 1st, 1881, were as follows:—

Shippers.	Tons.	Sup. ft. deals, etc.
A. Gibson,	79,288	73,602,000
R. A. & J. Stewart,	56,832	51,856,000
Carvell, M'Kean & Co.	31,475	29,106,000
Guy, Bevan & Co.,	21,211	18,763,000
W. M. McKay,	22,093	18,322,000
S. Schofield,	6,644	4,159,000
McLaughlin & Wilson	1,438	926,000
C. F. Clinch & Sons,	5,347	4,642,000
J. E. Knight,	2,145	1,794,000
J. & W. F. Harrison,	429	218,000
Henry Lane,	281	16,000
P. Spool M'fg. Co.	645	310,000
Total,	227,828	203,714,000

The shipments of deals from St. John in 1880 were 215,485,000 s. f., and the tonnage in the trade 259,944. The falling off this year is, therefore, 11,771,000 s. f. deals.

The timber shipments from St. John were as follows:—

Shippers.	Tons Birch.	Timber. Pine.
R. A. & J. Stewart,	23	....
Guy, Bevan & Co.,	188	....
W. M. McKay,	1,574	485
S. Schofield,	1,498	1,249
McLaughlin & Wilson,	1,851	....
Totals,	5,134	1,733

The shipments from St. John were distributed as follows:—

DESTINATION.

	No. of Vessels.	Sup. ft. Deals, etc.
United Kingdom	252	177,666,000
France	33	16,124,000
Spain	5	3,961,000
Africa	4	2,393,000
Australia	4	3,116,000
Holland	1	454,000
Totals	299	203,714,000

Of the timber shipped from St. John, 3,930 tons birch, and 1,734 tons pine went to the United Kingdom, 188 tons birch to France, and 8 tons birch to Africa.

RICHIBUCTO.

The Richibucto shipments (which include those of the outports of Buctouche and Cocagne), have fallen off considerably this year. The particulars are as follows:—

Shippers	No. of Ves'ls	Tons.	Sup. ft. Deals, Scantling, Ends, Boards.
George McLeod	15	5,804	5,047,000
Edward Walker	6	2,369	2,187,288
J. & W. Bralt	6	1,953	1,844,768
J. B. Wright	5	1,790	1,657,000
J. & F. Jardine	7	1,613	1,403,227
Doherty & Foley	1	800	713,700
Smith & Barnes	3	1,035	949,000
B. H. Foley	1	320	300,000
Longworth & Co	1	330	317,800
A. Tait	2	699	594,570
W. McNairn	1	279	271,100
G. & J. Robertson	1	308	255,600
Totals	44	17,279	15,541,053

In addition to the above, 50 tons timber were shipped by Geo. McLeod, Esq. Last year's shipments from Richibucto were, 21,372,346 s. f. deals, and 355 tons timber. The falling off this year is, therefore, 5,831,293 s. f. deals, and 305 tons timber.

BATHURST.

Bathurst has more than held its own this year. The shipments of that port are as follows:—

Shippers.	No. of Ves'ls	Tons.	Sup. ft. Deals etc.
K. F. Burns & Co	25	11,332	9,653,404
R. A. & J. Stewart	14	7,226	6,506,967
Totals	39	18,558	16,160,371

Messrs. Burns & Co. also shipped 289,854 pcs. palings and staves, and 161 tons timber, and Messrs. Stewart 312,655 pcs. palings. Last year's deal shipments from Bathurst were 13,125,946 s. f., so that the increase this year is 3,034,425, nearly all of which is in Messrs. Burns & Co.'s shipments.

DALHOUSIE.

Dalhousie more than holds its own this year in deal shipments and would have done even better but for an unforeseen delay in getting a new mill in operation. Its shipments were as follows:—

Shippers.	No. of Ves'ls	Tons.	Sup. ft. Deals Scantling, Boards, etc.
Geo. Moffat & Co	17	10,258	7,589,580
John McNair	6	1,828	1,657,783
Arch'd McNair	1	190	206,195
R. A. & J. Stewart	2	1,724	1,619,000
George Dutch	2	647	512,983
J. D. Sowerby	5	2,370	1,736,965
John Farrer, Jr.	4	2,454	1,516,211
J. P. Mowat	2	1,136	598,348
D. A. McBeath	2	670	601,062
Totals	41	21,277	15,838,127

Messrs. Geo. Moffat & Co., shipped 43,000 pcs. palings and the tons of timber shipped from Dalhousie were as follows:—

Shippers.	Birch.	Pine.	Spruce.
Geo. Moffat & Co	1,180	401	611
John McNair	86	79	116
Geo. Dutch	49	33	47
J. D. Sowerby	131	102	244
John Farrer, Jr.	369	232	606
J. P. Mowat	356	47	278
D. A. McBeath	....	..	54
Totals	2,171	894	1,956

Last year's shipments from Dalhousie were 15,262,845 s. f. deals and 3,661 tons birch, 910 tons pine and 1,364 tons spruce timber. The shipments of deals, therefore, show an increase of 575,282 s. f. and those of timber, a decrease of 914 tons. In last year's exports there was an item of 191,892 s. f. of birch plank, but there is no item of that class this year.

SHEDIAC.

The Shediac shipments show a considerable falling off this year, compared with last year. The following shows this year's export:—

SHIPPERS	No. of Ves'ls	Tons.	Sup. ft. Deals etc.
Carvill, McKean & Co	11	5,139	2,384,000
E. J. Smith	7	2,834	1,465,000
Wm. J. M. Hannington	5	2,637	1,200,000
J. L. Black	5	2,096	897,000
McManus & Sons	2	739	256,900
M. Wood & Son	1	545	263,000
J. Richards	1	177	65,000
Harper & Webster	1	187	84,000
Fidel Pourier	3	292	100,000
De Wolfe & Son	1	439	157,000
A. Cushing & Co	1	195	8[illegible],000
Totals	38	15,220	6,953,000

Last year the deal-shipments of Shediac were 10,917,080 s. f. The falling off is, therefore, 3,954,080 s. f.

CARAQUET.

There is no appreciable change in the Caraquet shipments this year. We endeavored, both by letter and telegram, to obtain the exact figures from the Collector of the port, but failed. We secured an estimate from a reliable source at Bathurst, which was published in the ADVANCE early last month, showing that Messrs. K. F. Burns & Co. had exported 3,750,000 s. f. deals this year against 3,729,012 last year.

SACKVILLE.

Sackville (including the outport of Baie Verte) shipped as follows this year:—

SHIPPERS.	No. of Ves'ls	Tons.	Sup. ft. Deals.	Palings
M. Wood & Sons	4	1,583	1,597,879	46,325
Joseph L. Black.	2	719	696,870	19,450
Copp Bros	3	1,170	1,086,000	....
Totals	9	3,472	3,380,749	65,775

The shipments of Sackville were 1 cargo, 656,251 s. f. deals less than last year.

It is yet too early to venture on an estimate of the trade for next year. Some thirty-five millions feet—estimated, however, at from thirty to thirty-three millions, by some of our merchants—of deals and logs are held over on the Miramichi, against about one half of that quantity last year, and some seventy millions the year before. The weather, so far has been fair for work in the woods, but as operators have to go further away from the mills and booms every year for logs, and to expend much time and labor in making roads and clearing streams, the quantities of lumber obtained grow less. Small operators, who could live at home while getting out a few hundred trees, and whose work aggregated quite a respectable item in the supply of round stock a few years ago, are becoming fewer and fewer of late years. With gradually decreasing profits to operators generally—due to more competition in the business of late years, and the increased prices of almost everything entering into the production of lumber—there are not so many now, as formerly, willing to risk the contingencies of lumbering, and there is, therefore, nothing in the present outlook to justify any expectation of next year's business being larger than the comparatively small business of this year. For many reasons a small export is desirable, for, owing to so much lumber having been sent to the United Kingdom from both North America and the Baltic during recent years, buyers have had things pretty much their own way, and the operators, millowners, and shippers have been barely able to make both ends meet. The North Shore has begun to do its part towards curtailing operations, and although we have no entirely reliable data on the subject from the St. John district, we believe the same conservative spirit will govern the trade there.

Closing the Schools.

We observe that the *Advocate* is in a tearful mood. This time it is not because of any quiet reference of ours to the difference between the professions and practices of some of those connected with it, but on account of the ADVANCE questioning the soundness of a pretentious censure administered to the School Trustees of Chatham by our weak and bumptious contemporary. Our Trustees, acting on the advice of such authorities as Dr. Jacobi, and after having vainly endeavored to see that no pupils were admitted from houses where diphtheria existed, determined, as the time before the holidays was short, to anticipate them somewhat by closing the schools. On some authority, not given by the *Advocate*, this course was condemned by it in a kind of Sir Oracle style, which could only be dealt with in a jocular manner.

Now, the *Advocate* discovers that the *Telegraph* is opposed to "schools in the country being closed when diphtheria appears in the community," and it quotes that paper with the most frantic exultation, as entirely justifying its position. At the same time it charges the ADVANCE with dreadful indifference, or worse, and indulges in the cant which seems to be its principal stock-in-trade, whenever it desires to appeal to public sympathy. We have not implicit faith even in the *Telegraph*, when it advises in matters of this kind and differs from such eminent authorities as the one to whom we have referred, who is at the head of the profession in New York in the branches of medical science to which he devotes himself. The *Telegraph* says "the best medical experience" does not approve of closing schools in the country when diphtheria prevails. Perhaps it will name its best medical experience. Until it does so we shall continue to believe its authority is not the best. The *Telegraph* also says special and prompt means should be taken to see that no person attends the school from a household affected with the disease.

If it can show the public how this can be done in a practical way, it will do something that has been tried and found impracticable heretofore in some places. In these matters it is not well to pay too much attention to the vagaries and theories of ignorant, inexperienced, or half-informed persons who set themselves up as "authorities." We prefer the advice of men who have established themselves in the confidence of other experts as qualified to advise even the "best authorities." We may add that we realise the gravity of a diphtheria epidemic quite as much as the *Advocate* can possibly do, but, at the same time, cannot look upon that paper's arraying its opinion against that of well known scientific authority in any other but a ridiculous aspect.

Who is Master?

The St. John *Sun* has been lashing itself into a fury over the idea of the Pacific Railway Syndicate being allowed to make a winter port of Portland or any other place but St. John or Halifax, but another Government organ, the Quebec *Chronicle*, gives up to the inevitable after the following fashion:—

"Of course Canadians do not wish to build up the ports of the United States, at the expense of Dominion enterprise, thrift and money. They would much rather help forward their own cities and ports. But our readers, and the editor of the *Sun* must know, that the Canadian Pacific Railway Company is not a sentimental organization but a business venture purely and simply. We have always stated this, and said again and again, that the Syndicate intended to make money out of their contract, and that they did not embark on this vast undertaking for the sole purpose of becoming philanthropists. They must be allowed to select their own means for doing their own business, and if they decide on making Portland, Maine, their port of entry to the sea, the terminus, in fact, of their line, we Canadians must submit to it, and we are very sure that the Syndicate will do it, if it can be shown that it will pay them to do it. The Company is working on business principles."

The Canadian Government made the Syndicate absolute masters of the important trade interests connected with the Railway system of the country when they threw the contract away on the terms so strongly protested against by the Liberals in Parliament and it is now too late for either Government, press or people to do anything but quietly aquiesce in what the Syndicate may please to do. The blame is not that of the Syndicate however.

MONDAY NEXT is a Public Holiday by proclamation of the Lieut.-Governor.

THE GUITEAU trial is still dragging along at Washington, the prisoner, as usual, having a great deal to say.

NEW YEAR.—In wishing our readers generally A Happy New Year, and hoping they will make and keep more than the usual number of good resolutions for the future, we suggest to those of them who are subscribers in arrears that the present is a good time to call at or communicate with the ADVANCE office.

A RASCAL:—Charles R. Ray, ex-Mayor of St. John and Chairman of the Water Commission of that City, has absconded. He owed about $20,000 and it is now said that on the eve of his departure he borrowed some $2,000 from confiding friends. A man must be very base, indeed, who could outrage public and private confidence as Mr. Ray has done.

Fish and Fish Culture.

An interesting article on Fish culture appears in the Toronto *Globe* of 15th inst., written by a visitor to the Hatching establishment under the personal supervision of Samuel Wilmot, Esq., at Newcastle, Ontario. Some portions of it are very interesting. We quote:—The changes from time to time in the methods employed in breeding in the hatchery, have been referred to, and it may not be uninteresting, before describing a new method just adopted in the establishments, to state what for years the method in whitefish hatching was. The *ova* were put into a tray, through which a stream of water unceasingly flowed. During the time the *ova* remained in the incubating condition, from day to day large numbers, though relatively to the whole number few, of white eggs appeared among the rest. Each white egg was a bad egg, and it was essential that such should be at once picked off. If allowed to remain it began after a day or two to put forth processes, which processes seemed to be a

FUNDING EXCRESCENCE,

which laid hold of and contaminated the next egg; the process went on, the affected eggs grappling others, till every egg within touch became a member of the foul confederacy, and was spoiled. It may be said that Professor Huxley and other distinguished writers on fishes, have lately pointed out that the marked decadence of the salmon in several of the Scotch and English rivers is due to the destructive work of the fungoid pest, but whether the pest is a protoplasmic parasite or a vegetable aggressive excresence, has not been defined. By the way, this might prove an interesting study for some of our own scientists expert with the microscope. Mr. Wilmot also states that the same disease has prevailed to a serious extent in many Canadian rivers, and he showed the writer fishes which had been attacked while under his own eye with the fungoid disease. One was a salmon trout, which, for its beauty, Mr. Wilmot had kept. Forty hours after the excresence appeared upon it, the fish was dead. Mr. Wilmot is of the opinion that the excrescence is of vegetable origin, and that the disease menaces only the higher and more sensitive order, the salmon family for example. This is why it becomes apparent that the salmon does not thrive, but dies out in those rivers which for the greater part of their course run through a cultivated region. In olden times these rivers ran through a continuous forest, which protected them from the too great influence of the sun. Now the country is bare, and with each rainfall large quantities of organic matter are carried down into the rivers from the country on both sides; while evaporation is more rapid and far greater by reason of the full force of the sun upon the river. Thus there is a superabundance of organic matter in the river now on the one hand, and a lesser volume of water on the other; hence in the summer heat in such a river will the salmon die. * * * The same fungoid that attacks the fish, it is that the unsound egg develops. It is, therefore, the continuous duty of those in charge of the hatching houses to pick off the infected egg as soon as it shows itself. In the case of the salmon fry, of which the egg is as large as a pea, this is quite a practicable task, but in the case of the whitefish fry, the egg of which is no larger than a grain of partridge shot, and where several millions of them have to be scanned, and the bad ones picked out one by one with a wooden pincers, the task was almost impracticable. Thus in the hatchery at Sandwich it was found necessary to employ from thirty to forty little boys and girls to pick the eggs, and corresponding numbers for similar work in the other establishments. Chiefly to get rid of this difficulty a

NEW METHOD OF HATCHING WHITEFISH

has been lately adopted in the hatching house at Sandwich, The method was to put the *ova* upon a perforated tray, through which a stream of water flowed continuously, and from these trays to pick off the affected eggs. Now, instead of this tray, a glass jar is used. The jar is cylindrical in form, and is capable of containing from 150,000 to 200,000 eggs. These jars are arranged side by side in a straight line, and in rear of this row runs a water pipe. From this pipe a number of smaller ones branch off, each connecting with the jar. It is in the conveyance of the water through the jar that the merit of the invention lies. A glass tube, the length of the jar, and about one inch in diameter is inserted into the jar. The lower end of the tube is larger than the upper portion, and is notched as one sometimes sees the top of a lamp chimney. Now the end of the branch water pipe, which is rubber, is put over the top end of this tube; the water is forced down and escapes through the notches in the lower end, and flows up through the eggs in the jar and escapes by a spout at the top of the latter. It will easily be seen that the motion of the water from the bottom to the top of the jar sets the fry in motion; and the diseased egg having less specific gravity than the sound one, comes to the surface and is borne away through the spout. Thus the work which in Sandwich, it took forty little boys and girls to do, can be attended to by one, indeed is accomplished of itself. This then is the great merit of the invention; but it likewise is superior to the old way in requiring only about half the quantity of water for the *ova*, and this, as in the case of Sandwich, where the water has to be raised by steam-power, is an item well worth considering. As to the effect upon incubation, there is none one way or the other, the process going on as well on the tray as in the jar. The system

CANNOT BE APPLIED TO SALMON FRY

for the continuous motion would addle the egg. These jars are now exclusively employed in white fish culture at Sandwich. At the present there are in that hatchery one hundred and fifty jars, each containing upwards of 150,000 eggs, or the whole aggregating about 24,000,000. The principle present in the glass jar existed in a tin jar which had been invented by Mr Wilmot several years ago, and been used for some years past in the Newcastle hatchery. A patent, after the invention, was taken out in Washington, but nothing was charged to any one for its use. After a certain number of years the patent expired, and an "enterprising Yankee," getting the idea from the Newcastle tin jar, constructed a glass jar. The American having produced the glass jar, Mr Wilmot saw it was best, and used it in the establishment. The Yankee patentee came over, and thought he should be "allowed something" for the use of his patent. Mr Wilmot was much amused; certainly did not treat the request seriously. But he set at work, and instead of using a glass jar with a tin top, like the Yankee inventor's jar, he had his, entirely constructed of glass, which is a decided improvement, for it shows if the work of separation is being carried properly out. It may be here stated that the hatchery at Newcastle has been the model school of the continent It was the first established, and every step it has since made has almost invariably been copied by the American fishery officers.

INTRODUCTION OF CARP.

The most important movement made in the fish-breeding division of the fishery department for some time, is the step which has been taken towards the introduction of the German carp into our Canadian rivers. The carp is known in Germany as the "poor man's fish," because it is more plentiful and is produced in rivers unsuited for the higher order of fish, and is of consequence cheaper. It is extremely prolific, of rapid growth, reaching three or four pounds in one year, and up to fourteen pounds at its full growth; while better than all, it thrives upon the very fungus-producing or vegetable matter which will kill a member of the salmon family. The carp is a vegetable feeder, in contradistinction to most of the other fishes which are animal feeders. Therefore, the ponds and streams abounding through the Province and surcharged with organic matter or spohrs are exactly adapted for the sustenance of the carp. An experiment of how this fish would thrive in America was made three years ago by Professor Baird, who brought several from Germany and put them in ponds which he had created for them. They throve wonderfully well, reaching the maximum of growth for each year till they attained maturity. Last season Mr. Wilmot, through Professor Baird's courtesy, obtained thirty or forty carp, which he has kept since. Most of these lived, and have thriven so well that Mr. Wilmot had several ponds near the hatchery ready for the reception of a sufficient number for breeding purposes. Next season, therefore, hundreds of thousands of carp fry will be in process of maturity at the Newcastle hatchery. It is the intention to supply all the suitable ponds and rivers as fast as practicable, which will be at a rapid rate when all the hatcheries in the Dominion will have begun the work.

TRIAL OF CALIFORNIA SALMON.

There are now in the Newcastle hatchery 250,000 eggs of the California salmon, which have been obtained from California, likewise through Professor Baird's courtesy, for the mere carrying cost. Besides this number, 300,000 have been sent to the house below Grand Falls on the St. John River in New Brunswick. It is believed, and it does not seem unreasonable, that the salmon from the Pacific coast will thrive as well in the Maritime Provinces as in its native waters. As for the River St. John, it needs supply from some quarter, being now almost entirely barren of fish.

The number of salmon, salmon-trout, and whitefish eggs in the Dominion hatcheries now is about 34,000,000, which is considerably in excess of last year's number. There is, likewise, being established on the Restigouche River, New Brunswick, a salmon hatchery, which will be much the largest in the Dominion. This building will be not less than 100 feet by 40 feet. It is also proposed to erect a breeding-house for salmon at some convenient point in British Columbia.

REMEDYING BAD PRACTICES AT MIRAMICHI.

During next season it is decided to remove the cause of complaint on the Miramichi, N. B., respecting the alleged taking of breeding salmon off the spawning beds for the hatcheries, by catching the fish on the common fishing grounds instead, and keeping them in ponds prepared in conjunction with the hatchery there. It is the intention now to take for the house about 200 female and 100 male salmon; which allowing 7,000 eggs to each female fish would give 1,400,000. The number of eggs which will be used in the Restigouche house will be largely in excess of this. Then as to the progress in the increase of the fisheries from all these eggs and all this culture, several practical fisherman, perhaps because they do not understand the subject, maintain that fish culture does nothing but wastes money. All the writers of note upon fishes give opinions contrary, and to their testimony is added the strong argument of men like Mr. Wilmot. Prof. Buckland and other writers agree that the number of fishes' eggs maturing in a course of nature does not exceed four or five per cent.; while it is known by actual computation that an average of seventy-five per cent. of the eggs mature in the hatching houses. This difference is thus and reasonably explained. Take the case of the salmon. She deposits her *ova* on the spawning bed, but before she can succeed in covering it, and often she does not securely cover it, it is borne away by the current. Then in rivers subject to heavy floods, the river bed at the spawning grounds is frequently scoured and the eggs totally destroyed, while there are always on hand a number of freebooters ready to feast on the eggs. In the hatchery the art of man keeps all these dangers away. The fish is liberated just after it has absorbed the umbilical sack and begins to look for food; so that in all respects it would seem as well equipped to do for itself then as if it had remained covered under the gravel and rocks during the winter. Certainly all the argument is on the side of the theorists. The hatchery at Newcastle now is so full that, instead of keeping the little fishes, as has been the custom, till the spring, it will be necessary to put them now into the lake. So long, however, as care has been taken that the water in the nursery was maintained at the same temperature as the lake water, the little creatures will be as well let go now as in the spring.

CURIOSITIES IN THE HATCHERY.

Mr. Wilmot besides having a special taste for ichthyology is likewise on a general scale a naturalist, and a taxidermist as well. In his collection