

A CONNECTICUT MAN EVOLVED THEORIES ON STORMS WHICH THE SCIENTISTS HAVE PROVED TRUE

(By Frederic J. Haskin in Boston Traveller)

Washington, Dec. 13—A Connecticut saddler was the first discoverer of the nature of storms and the observations of this Yankee mechanic revolutionized the theories of the early meteorologists. William C. Redfield was the saddler and, in 1821, he had occasion to journey into western Massachusetts. He had set out immediately after a severe September gale which had caused much destruction. As he rode northward he noted a phenomenon.

Direction Changed

At home in Connecticut he had seen that the hundreds of felled trees had been thrown down with their tops pointing eastward. As he advanced into Massachusetts he observed that the position of the felled trees progressively changed and that, finally, they all had blown down with their tops pointing to the west. It was this simple observation of the saddler which first established the circular movement of storms. He happened to relate what he had noticed to Prof. Olmstead of Yale, who got him to write a paper about it. He did so and to this day Redfield's Remarks on the Prevailing Storms of the Atlantic Coast and the Northeastern States is something of a classic. For millions of years the winds had been blowing between the world's but it remained for a Yankee saddler to discover the whirlwind.

Redfield's discovery attracted wide attention not only because of its intrinsic interest, but also because his observation ran counter to the theory of storms of the leading American meteorologist of the period, James Polard Espy. Espy was a physicist who had been proclaimed at the French Academy of Science the peer of Newton and for the Connecticut mechanic to advance a theory counter to his was decidedly lese majeste. Espy's theory of storms was, briefly, that they were caused by heated air rising and colder air rushing in. He claimed that a storm was a vortex rather than a whirlwind.

Redfield stood to his guns and developed his observations. He obtained all the information he could on storms the world over and drew conclusions from the tales of mariners. Although he never had been there himself, as early as 1834 he expressed the opinion that the typhoons of the China Sea, told by the New England sea captains who sailed out to China in the tea clippers, were similar to the West Indian hurricanes told of by the sailors. He also declared that he believed storms in the Southern Hemisphere would be found to rotate in an opposite direction.

It is an amazing fact that sitting at his saddler's bench in Connecticut Redfield evolved theories of storms which modern science, years later, has established as true.

Interest in Records

About this time, Lt. Col. William Reid one of the Duke of Wellington's soldiers in the Peninsular War, was sent by the British to govern the Crown Colony of Barbadoes. Just before his arrival, the island had been swept by a destructive hurricane which fixed the new Governor's interest on storms. It chanced that there fell into his hands Redfield's paper on the nature of storms and the Barbadoes Governor entered upon a correspondence with him, a correspondence of which three volumes remain in the library of Yale University. Col. Reid's interest was so much aroused that he induced the East India Company to assign a man to the study of storms in the East. Captain H. Piddington, curator of the Calcutta Museum, was given the task. It was he who coined the word "cyclone" and it was he who wrote "The Sailor's Hornbook of Storms in all Parts of the World." Thom and Meldrum, working at Mauritius, followed up the studies with reports on the Indian Ocean and every successive report which was printed bore out the ideas of the New England saddler.

Meantime Espy had a strong following and with the support of learned societies arranged a chain of weather observations in Pennsylvania, having induced the Legislature of that state to appropriate \$4000 for the purchase of instruments. Although at odds with Redfield on the theory of the circular movement of storms, Espy is credited with adding many valuable contributions to the lore of weather and his "Philosophy of Storms" long was regarded one of the best source-books on the science of weather.

An intimation of the large interest which was being displayed in weather a century ago may be obtained from the circumstance that, when Elias Loomis graduated from Yale in 1830 and was appointed a professor of mathematics at the new Western Reserve University on the Connecticut Western Reserve in Ohio, he was permitted to spend his first year in Paris, where he specialized in meteorology. On his return he added to the mathematical course which he taught the subjects of meteorology and terrestrial magnetism. He carried on original research and lectured on the aurora borealis.

First Synoptic Map.

In Europe he had purchased a number of instruments for use in making weather observations and employed them in instructing his classes. In 1842 in the course of reading a paper before the American Philosophical Society at Philadelphia, he introduced the first synoptic weather map. Later he made contributions to the studies being carried on by the signal corps of the army. In looking back on that early work modern meteorologists find that the early observations of Loomis as well as those of Redfield have been borne out.

One of the most absorbing facts about the work of these early weather men in that they established their theories with a very minimum of data. There were not as now, thousands of weather observation points throughout the world and observatories maintained by governments. Sailing-ship masters contributed data on storms at sea and the gossip and observations of farmers furnished much of the land information. These pioneer scientists, by arguing the particular from the general and the general from the particular, were able to build up theories of weather behavior for every portion of the globe. The accuracy of most of their conclusions is regarded as astounding.

Some meteorological work was being done in other countries. Capper was in India studying the monsoon, and Aomme the typhoons of the gulf of Tonkin; Brandes at Breslau and Leipzig was constructing charts from daily observations but research indicates that the science was being most rapidly advanced by Americans. At that time the chief point of interest of most weather men was the gathering of data which would aid mariners in avoiding storms. The tremendous commercial value of weather reports in relation to crops and other activities was not then realized. The work, at these early periods, was chiefly the dissection of storms and the investigation of their causes; the business of forecasting was not to follow until the next stage in the development.

BLOODSHED JUST A TRIFLE TO THIS GENT

New York, Dec. 14—Among the licensed referees operating under the New York State Athletic Commission none compares in all-around ability with the colorful Tim Hurst, who presided over many of the important glove fights held here during the life of the Horton boxing law, that was repealed in 1900. Hurst never prevented bloodshed in the ring. That is to say, he refused to stop a fight because one of the principals received a gash on the head or face. He wouldn't have stepped between Tommy Loughran and Ray Impellitteri a couple of weeks ago because the former was bleeding profusely from a deep cut on the lower lip.

Hurst refereed the most sanguinary fight ever seen in this State. It was the memorable Joe Walcott and Kid Lavigne scrap at Maspeth, nearly 40 years ago. Lavigne, then lightweight champion of the world, compelled the dusky Joe, who later was the world welterweight champion, to weigh 133 pounds four hours before entering the ring.

In order to scale at that notch, Walcott had to take off about ten pounds. Yet he was wonderfully strong, and at the end of six rounds he literally had cut Lavigne's face to ribbons. In the seventh round Lavigne's left ear was almost torn off. He was covered from head to foot with his own blood and when he went to his corner many spectators urged Referee Hurst to interfere and stop the slaughter.

Lavigne told Hurst he was all right,

and the battle proceeded. In the 15th and last round, Lavigne came within an ace of scoring a knockout, and Hurst declared him the winner because as stipulated in articles of agreement, he had gone the limit without being put to sleep. After the fight, Lavigne and his manager, Sam Itzpatrick, complimented Hurst for showing excellent judgment. Then a surgeon took half a dozen stitches in Lavigne's ear.

MOSQUE IN PARIS BANS TIPPING

Paris, December 13—The Mohammedan Mosque here has put into effect a non-tipping regulation.

The mosque was inaugurated by President Doumergue in 1925, and since has become one of the sights of the city. The number of visitors approaches the 150,000 mark yearly, but they do not come to worship; rather to admire the architecture and imbibe nonalcoholic drinks in the Islamic

cafe, and, on occasion, to take a Turkish bath, since these are open to "infidels."

A substantial increase in Canada's customs and excise taxes over the same month of last year is reported at Ottawa for the month of November. The total receipts were \$20,355,435, an increase of \$20,459,081. The increase has wiped out losses earlier in the year.

It's worth remembering that when your wife says she'd like something useful for Christmas she doesn't mean a smoking set.

DR. G. R. LISTER Dentist

Burchill-Wilkinson Building
Queen Street, Below Regent
Phone 581-11

Hanson, Dougherty and West

BARRISTERS SOLICITORS, ETC.
Carleton Chambers
41 CARLETON ST. FREDERICTON

Come to — A Printing Office FOR YOUR PRINTING Requirements

Envelopes
Programmes
Bill Heads
Books
Dodgers
Menus
Receipt Books
Pamphlets
Statements

Financial Statements
Auction Sale Hangars
Wedding Invitations
Butter Wrappers
Visiting Cards
Circulars
Legal Forms
Reports
Catalogues

All Kinds of
CIRCULARS AND PAMPHLETS
Printed to Order

PRINTING IS OUR BUSINESS

The Entire Printing Department of
THE MAIL Is at Your Service In Your
Printing Needs

Mail Printery

Phone 67

627-29 Queen Street

FREDERICTON, N. B.

Printing That Combines Price With
Satisfaction

Here's a Genuine NEWSPAPER BARGAIN FOR YOU

Until Further Notice the Daily Mail and
The Family Herald and Weekly Star
will be sent to Any Address in New
Brunswick for the Exceeding-
ly Low Price of

\$2.50 Per
Year

Everybody is Looking for an Opportunity to Save
Money in these Trying Times and
Here is a Golden Opportunity

Two Papers for Less than the Regular Price of One

The Family Herald and Weekly Star is by long odds Canada's
Greatest Weekly Newspaper. Its pages teem with matter of interest
to the Farmer... the Lumberman... the Artizan and members
of their families. Farm women will find in its columns matter of
special interest and value to them. The children will also enjoy it.

Send in Your Subscription without Delay
and use this Order Blank

THE MAIL PRINTING COMPANY,
Fredericton, N. B.,

Enclosed find the sum of \$2.50 (cash or postal note) for which
send me The Daily Mail and Family Herald and Weekly Star for
the period of one year.

Name

Address R.R. No.