

# OPINION

## A thought for polysaccharides

**H**ave you given much thought to polysaccharides recently? If you're anything like most people, the answer is probably no. But that doesn't mean you shouldn't devote some consideration to the topic.

Polysaccharides, a form of carbohydrate that has a compositional role in animals and plants, can be found in starch and cellulose. They are so important that they've been described by some experts as one of the most valuable natural substances available to mankind.

Aside from being easily absorbed by the human body, polysaccharides are capable of activating the body's natural immune system and have been shown to, among other things, slow the aging process and be of use in the fight against cancer.

According to Dr. Stephanie Hesse-Ertelt of the Thuringian Institute of Textile and Plastics Research (TITK) in Rudolstadt, Germany, a leading expert on the topic, their function in living organisms is usually either structure or storage-related.

Dr. Hesse-Ertelt said research into polysaccharides allows people to understand essential and certain correlations in product design, while allowing for improvements and developments in tailored products for different branches of industry.

Modified polysaccharides are used in the food, auto and clothing industries, as well as the medical and cosmetic sectors.

Dr. Hesse-Ertelt has been involved in a number of leading edge polysaccharide initiatives over several years.

Her current research project is about the influence of salts on the structure-property relationships of the polymer (natural and synthetic compounds of usually high molecular weight) solutions and their shaping.

"It's even more practical orientated and usage-based than all of my research projects before, since my sample characteristics can be directly implemented into new products at the TITK," Dr. Hesse-Ertelt said in an email interview.

Over the past several years, the Thuringian Institute of Textile and Plastics Research has utilized its expertise to become a modern institute for materials' research.

Dr. Hesse-Ertelt's expertise is fo-



SCOTT HALLERAN/GETTY IMAGES

**Thinking about polysaccharides:** Polysaccharides can be found in any class of carbohydrates such as starch and cellulose. Cellulose is found in plants, such as these gorgeous magnolia trees at Augusta National Golf Club in Augusta, Georgia

cused on what is known as unmodified, but dissolved cellulose (the basic material of all plant substance) pulps and silk samples used in spinning processes for the clothing industry. It sees different ionic liquids used to dissolve biopolymers.

"Ionic liquids are salts in the liquid state, whose melting point is below 100 C," Dr. Hesse-Ertelt said. "They are largely made of ions (atoms that have acquired a net electric charge) and short-lived ion pairs, and may serve as effective solvents, especially in cellulose chemistry."

By definition, cellulose chemistry studies the industrial applications of carbohydrate polymers in areas such as food, textiles, paper, wood, adhesives, pharmaceuticals, oil field applications and industrial chemistry.

Dr. Hesse-Ertelt oversees analytical measurements, such as nuclear magnetic resonance investigations, to optimize manufacturing requirements with respect to the sample structure.

Cellulose and silk fibres are already produced by the Thuringian Institute of Textile and Plastics Research for skin therapeutic application. Other manufactured products are electrical conductive, bio-active, ion exchange, ceramic, and super absorbing fibres.

"My primal research on bacterial

celluloses, for instance, allowed the optimization of nutrition media and, thus, the structure modification of produced cellulose fibres," Dr. Hesse-Ertelt said. "The so-called BASYC (Bacterial SYnthesized Cellulose) blood-vessel implants that are made from cellulose-producing bacteria in special cultivation vessels are currently tested in vitro on human blood."

BASYC implants are biomaterials, characterized by the possibility of a fast formation of endothelial (cells that line the blood vessels of the entire circulatory system) tissue.

"Bacterial cellulose is also predestined in the cosmetic sector," Dr. Hesse-Ertelt said.

Part of Dr. Hesse-Ertelt's work on functionalized polysaccharide esters (organic compounds) allowed for the development of biocompatible fluorescent nanoparticles for ratiometric pH-sensing in living cells. The pH of a solution indicates how acidic or basic (alkaline) it is.

While barely scratching the surface of this amazing topic, it quickly becomes clear that efforts of Dr. Hesse-Ertelt and others like her have done much to improve the quality of life, not only in Germany, but in Canada and around the world.

And, it's all thanks to polysaccharides — something we rarely ever give any thought to, but probably should.

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Michael Staples

THIS WORLD



Dr. Stephanie Hesse-Ertelt

## SLOT MACHINES, LIQUOR AND ROWS LED TO POOL ROOM SHUT DOWNS

**T**he advent of warmer weather, Easter bonnets and Sarah Bernhardt gave a lift to the hearts of Gleaner readers as a new season emerged in 1912.

"The weather is becoming quite spring-like," wrote the Jacksonville correspondent in the March 30 edition. "The roads are in good condition for this time of year."

"Some of the farmers have finished their spring work, while others are busy hauling their hay to Upper Woodstock, returning with loads of phosphate. There will be a large acreage of potatoes planted the coming season."

It was not all good news in Jacksonville, however, since the "German measles are making a tour of this place and nearly everyone, old and young, is receiving a call."

The Misses Young on Queen Street in Fredericton advertised "Beautiful Millinery for Easter," noting that "Our Millinery Opening was a great success. The lavish display of beautifully trimmed Hats and rare Millinery Models have been the delight of all ladies who have visited our parlors. In our charming selection of the best Paris can offer, you will find it an easy matter to select a hat that is entirely becoming to you. The prices are extremely moderate. In fact, some ladies have been greatly surprised at the comparatively low cost at which they have been able to buy thoroughly fashionable millinery for Easter wear. You are cordially invited to either inspect or purchase."

Men were not left out of the fashion picture. W.E. Farrell, opposite the Normal School, offered men's hats in "all the 1912 Models, in Black Derbys, Colored Scratch Felts in Fedora and Telescope Shapes, and a special Derby Hat made in four new shapes expressly for this Store."

Farrells were also "enthusiastic over our Spring Shirts. They look good to use. Come in and look them over. You will be surprised at the ranges — all colors, but mostly neat Black and White effects, and from \$1.00 to \$1.50."

The Royal Store had "real swell" ready-made suits made "by expert tailors, in the big city styles" that "fit perfectly and look handsomely."

Once attired in all this sartorial splendor, readers could avail themselves of the finest in entertainment in Fredericton through the marvel of motion pictures.

"If the opportunity presented itself some years ago to see the great and only Sarah Bernhardt at popular prices, the populace would stare in open-mouth wonder and consider how it would be done," said a March 30 Gleaner item.

"Modern science, in its rapid strides, however, makes this possible, and the fact that this wonderful artist will be seen in all her glory at the Opera House, Good Friday afternoon and evening assures a crowded house at both performances. Mme. Bernhardt will portray her greatest character, 'Camille,' making one of the most interesting yet thrown from a motion picture machine. Secure your seats early."

On April 3, The Gem Theatre offered "Fine Vaudeville — The Most Pleasing Act That Has Been Given in Fredericton," featuring "Miss Irene Talbott and Mr. Shadrack." In addition, the program included a western drama called "The Broken Spear," an Irish production called "The O'Neill," and a comedy called "Bunny and the Twins."

Patrons of two local pool rooms would have to find their entertainment elsewhere, reported the April 2 Gleaner. Establishments on Regent and Carleton streets were ordered closed by the Police Commission following complaints of a row and reports of the sale of liquor.

"It is also understood that slot machines which have been in operation in pool rooms have been ordered out by the Police Commission," the report concluded.

Words of Wisdom: "The easiest way for young folks to get into trouble is to have parents sure they won't."

"The flighty girl may not be angelic." "What the world needs is less good advice and more good example."

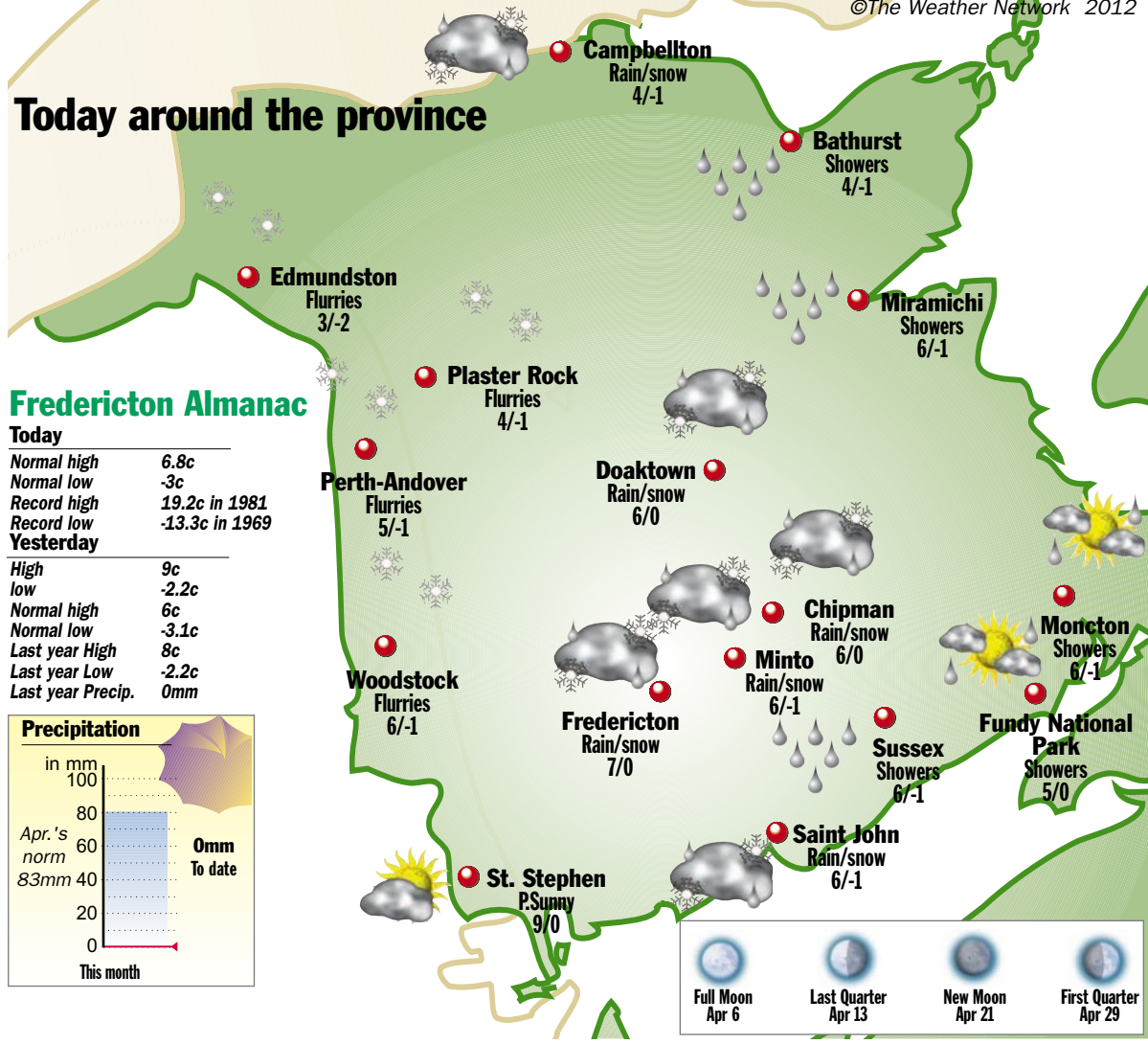
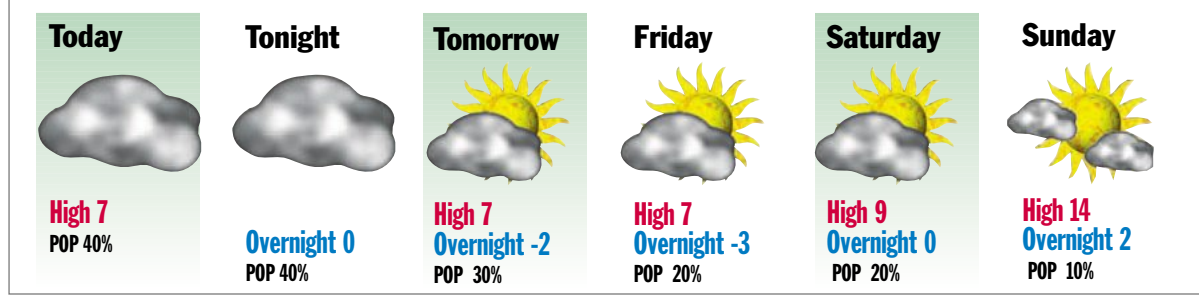
Connie Shanks Storr is a writer with a penchant for local history. To prepare this column, she researches Daily Gleaner newspapers from a century ago and selects stories and other items of interest from them. She can be reached at [conniecolumn@gmail.com](mailto:conniecolumn@gmail.com).



Connie Shanks Storr

THE WAY WE WERE

## Fredericton Area Weather Forecast



### FORECASTS

#### New Brunswick

**Fredericton-Oromocto:** Wet snow ending in the morning, mainly cloudy in the afternoon (pop 60%). Winds decreasing to northwesterly 15km/h. Mainly cloudy (pop 30%) tomorrow. Moderate winds.

**Woodstock-Hartland:** Cloudy with a few flurries ending in the morning, mainly cloudy in the afternoon (pop 60%). Winds light. Mainly cloudy (pop 30%) tomorrow. Moderate winds.

**Harvey-McAdam:** Cloudy with a few flurries ending in the morning, cloudy with sunny breaks in the afternoon (pop 60%). Winds light. Mainly cloudy (pop 40%) tomorrow. Moderate winds.

**Minto-Chipman:** Wet snow in the morning, showers in the afternoon (pop 60%). Winds light. Mainly cloudy (pop 30%). Winds light. Cloudy with sunny breaks (pop 40%) tomorrow. Light winds.

**Miramichi:** Variably cloudy in the morning with showers developing in the afternoon (pop 60%). Winds light. Mixed precipitation in the evening, a few flurries overnight (pop 40%). Winds light. Variably cloudy (pop 30%) tomorrow. Light winds.

**St. Stephen-St. Andrews:** Mainly cloudy in the morning, becoming variably cloudy in the afternoon (pop 40%). Winds light. Mainly cloudy in the evening, becoming cloudy with clear breaks overnight (pop 30%). Winds northwesterly 0km/h becoming 20km/h. Cloudy with sunny breaks (pop 30%) tomorrow. Moderate winds.

### Canada Today

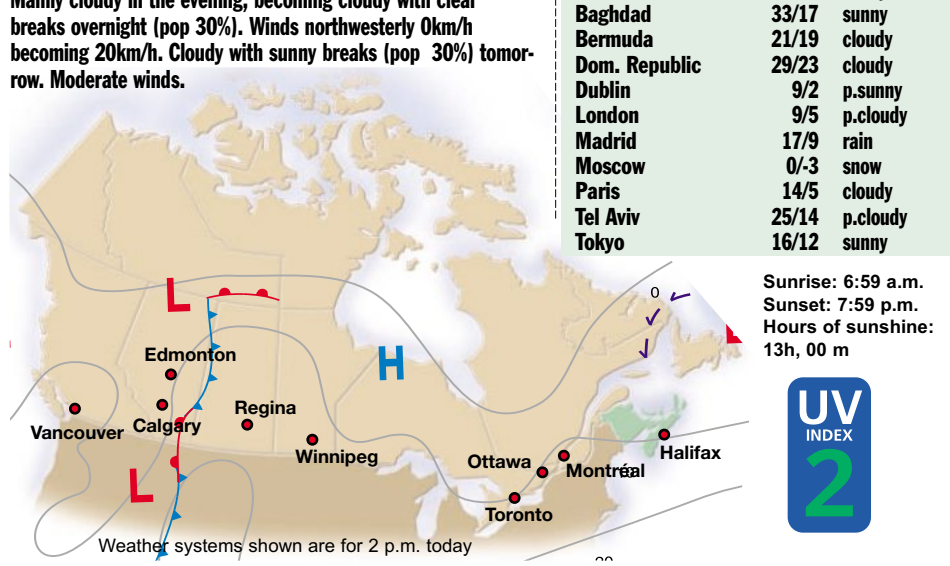
Brandon	15/0	sunny
Calgary	4/-1	rain/snow
Charlottetown	4/0	p.cloudy
Churchill	-5/-12	p.cloudy
Edmonton	7/0	p.cloudy
Halifax	6/-1	p.cloudy
Montreal	9/0	showers
Ottawa	9/-1	showers
Quebec City	6/-1	flurries
Regina	17/5	sunny
Saskatoon	18/4	p.cloudy
St. John's	3/-1	rain
Toronto	11/0	m.sunny
Vancouver	9/3	showers
Victoria	9/4	tshowers
Winnipeg	14/0	sunny

### USA Today

Atlanta	27/18	tshowers
Boston	16/5	p.cloudy
Chicago	14/4	p.cloudy
Dallas	27/13	p.cloudy
Detroit	16/2	sunny
F. Lauderdale	30/21	p.cloudy
Honolulu	27/20	showers
Las Vegas	28/12	windy
Los Angeles	18/11	p.cloudy
Miami	30/21	p.cloudy
New York	18/6	showers
Phoenix	30/16	sunny
San Francisco	13/6	sunny
Washington	23/7	tshowers

### The World Tomorrow

Amsterdam	9/1	sunny
Baghdad	33/17	sunny
Bermuda	21/19	cloudy
Dom. Republic	29/23	cloudy
Dublin	9/2	p.sunny
London	9/5	p.cloudy
Madrid	17/9	rain
Moscow	0/-3	snow
Paris	14/5	cloudy
Tel Aviv	25/14	p.cloudy
Tokyo	16/12	sunny



Sunrise: 6:59 a.m.  
Sunset: 7:59 p.m.  
Hours of sunshine: 13h, 00m

