UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

HOUSEKEEPERS' CHAT

Saturday, January 23, 1937

(FOR BROADCAST USE ONLY)

Subject: "NEWS NOTES FROM WASHINGTON." Information from the Bureau of Home Economics, United States Department of Agriculture.

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Listeners, our Washington correspondent is reporting stiff news this week. She's writing about starch for fabrics. Maybe you have been thinking that the plump-lady-on-a-diet is the only person who gives serious concern to her starches. If so, you'll be surprised to learn about the starch investigations that Department-of-Agriculture scientists have been carrying on. But I'm going to let you hear about them straight from the pages of today's Washington letter.

Writes our correspondent: "My, how surprised my grandmother would have been as she made her usual Monday-morning batch of starch from her own potatoes, and then used it on the family petticoats and pinafores -- how surprised she would have been to look down the years and see me visiting a young woman textile-chemist in a Government laboratory who was testing starches. And how surprised she would have been to see this same young woman using various kinds of starch, not only the familiar potato and corn starch, but also rice and wheat starch, and starch made from canna, and even from a vegetable called dasheen in this country but very similar to the Hawaiian taro. (Ever hear about that Hawaiian dish called 'poi'? It's made from taro.)

"Well, the young chemist I'm referring to is Miss Margaret Furry of the Bureau of Home Economics. And from her I've learned, among other things, how many people nowadays are concerned with these scientific investigations of starch. For example, the textile manufacturers, especially the cotton-textile makers. They use a good deal of starch on the cotton yarns to make them smooth and firm for weaving, and they also use it to 'finish' their fabrics. Then, of course, the launderers are interested in starch. And so are the farmers who have products like potatoes and corn to sell. And last but not least, these starch investigations concern the housewife who buys goods finished with starch and who also wants to know how best to use starch in her home laundry.

"To get back to Miss Furry -- she has made two recent starch investigations. One was on stiffness, and the other on strength produced by starching fabrics.

"Of course, you know that though stiffness is one of the important qualities of a good starch, it is not the only one. We want starch also to make fabric pliable and give it a smooth, glossy look when finished. The wrong kind of starch or too much starch gives that sadly familiar but uncomfortable, unattractive, stiff-as-a-board texture. Miss Furry found that the most satisfactory starch penetrates well into the fibers of the cloth instead

of forming a hard crust on the surface. She also found that starches from different vegetables give very different finishes to fabrics, and that adding such substances as borax, or wax, or fat to starch-pastes will change the properties of the starch considerably.

"As I said, Miss Furry studied 7 different kinds of starches -- potato, sweetpotato, corn, rice, wheat, canna, and dasheen. Of these 7, she found that canna had the greatest stiffening power with dasheen ranking second. Third came wheat starch, with rice, sweetpotato, corn, and white potato starch following in order.

"Miss Furry tells me that humidity has a decided effect on starched fabrics. She says, for example, that if you live in a damp climate, say along a seashore, you'll want to use more starch or a stiffer starch in your window-curtains and cotton clothes than if you live in a dry climate -- on the Arizona desert, say.

"Did you ever consider the make-up of the commercial laundry starches that you buy in packages at the grocery store? I never did until I had this starch chat with Miss Furry. She tells me that most of these are modified corn starch. Some makes have been heated or treated with acid to make them cook up better -- more soluble, as the chemists say. Some are mixtures of starch and borax or wax or lard or soap. She finds that borax makes starch-paste thicker, gives it a greater stiffening power, and also tends to prevent its browning under the iron. As for fats, soaps, and waxes, added to starch, they help the mixture to penetrate the yarns, make the fabric softer, and give a finish that irons more easily and has a smoother surface.

"So much for the investigation of stiffness in starch. Now about strength. Textile manufacturers have known for some time that adding certain starch-sizing to cotton yarns not only makes them smoother and thus easier to weave, but also stronger. Miss Furry has been interested in finding out whether starching the fabric rather than the yarn -- starching cotton fabric in laundering or mill finishing, makes it more durable. So she tried out the 7 different vegetable starches as well as 4 commercial or modified starches on different kinds of cotton fabric. She chose voile, nainsook, longcloth, and sheeting as representative of different weights of plain-weave cotton material. When she had them all carefully starched, she tested their breaking-strength. And she found that the potato, canna, and sweetpotato starch gave the greatest strength to the fabric, and that next in order was corn, then rice and dasheen, with wheat last. She found that modified starches have practically no effect at all on strength. She also found out something about the stretching of starched fabrics. Her tests showed that fabrics starched with potato and canna stretched the least while those starched with dasheen and wheat stretched the most. She thinks the stretch is determined by how much the starch penetrates the fabric. Starches that penetrated well gave the most strength and the most stretch. Starches that only formed a coating over the fabric gave the least strength and the least stretch."

That finishes our weekly Washington letter.

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