



THE QUEEN MARY

CHEMISTRY-AGRICULTURE

Death Knell of Cotton Pickers Suggested at Conference

ROMANTIC pictures of singing cotton pickers down in Dixie, already threatened by the development of a machine to do the picking, are in danger from another quarter, it developed at the meeting of the second Dearborn Conference of Agriculture, Industry and Science, held this year in Detroit.

Dr. Frank K. Cameron of the University of North Carolina put forth a proposal to grow the cotton thick in the field, forcing the largest possible number of bolls to maturity at the same time, and then cut and dry the whole business, as prosaically as so much hay.

These whole dried cotton plants are to be ground down to a powder and then put through a double chemical treatment. The first step will extract the oil, the second will digest both the cotton and the cellulose of the stalks into alpha cellulose, basic material in the manufacture of rayon and other modern products of chemical industry.

Only Possible Salvation

Dr. Cameron has been carrying on fairly large scale experiments for several years, and is anxious to see his method tested out in other cotton growing sections. He is convinced that for his own part of the South, where cotton was first grown in this country, it is the only agricultural and economic salvation.

The land there is too hilly for the use

of tractors, cotton picking machines and other types of "cotton field artillery" that have come into action on the flatter terrain of the western Gulf states. So the mowing machine and the chemical kettle bid fair to exile the singing cotton field "hands" and the cotton gin to the only territory where they have been really profitable for the past few years—upper Broadway.

When a Plant Bites, That's News

The cowboy's boast in the old song, that "rattlesnakes came out and bit me—and then crawled away and died!" is made good by plants when treated with certain substances that makes their sap poisonous to sucking insects, though the substances themselves may not have any poisonous effect if applied directly to the pests.

This curious phenomenon of plant immunity to insect bites was discussed by Prof. Dwight M. DeLong, of Ohio State University.

The insects belong to the group known as leafhoppers. They afflict the plant by sticking their sharp little beaks into the leaf-veins and sucking the sap, much as mosquitoes afflict mankind. Usually they can be killed only by what are known as "contact insecticides," which immediately wipe out the insects they touch, but have no effect on later comers. (Turn to next page)

MARINE ENGINEERING

Seaworthiness of New Ship Insured by Sound Planning

By BENJAMIN WISTAR MORRIS

(EDITOR'S NOTE: Mr. Morris, a leading architect of New York City, served as joint counsel and designer on the planning and decoration of salons of the *Queen Mary*, and as personal adviser to Sir Percy Bates, chairman of the Cunard White Star Board.)

See Front Cover

SHIPS designed to cross the North Atlantic in winter as well as summer must stand such enormous stresses as are engendered by high seas. Into the Cunard White Star liner *Queen Mary*, destined for year-round service, experienced builders instilled seaworthiness by means of sound planning.

Structure as required by the British Board of Trade was the first consideration and no concessions were asked for by designers of the ship's interior. Beauty within the ship consists of arranged construction, embellished with an economic, sparing, and studied use of ornament. For good and practical reason, the *Queen Mary* does without the glories of unbroken vistas extending the length of the upper deck.

Her three direct uptake funnels arranged along the center line of the ship continue directly upward to their outlets, instead of being deflected up the sides and over the promenade deck as is the case with a number of vessels of Continental design. In addition two large engine hatchways are installed further aft along the center line. Taken together, the funnels and hatchways comprise five unbroken elements of structural steel rigidity extending through the entire height of the ship, into which extra heavy deck plates and girders were tightly woven, the whole bracing the horizontal structure at every level.

Extra thick plating was provided for the ship's double hull, which extends as far up as the waterline, and for her sides and decks, while ribs are more closely spaced than heretofore. The great strength built into the hull is borne out by the vessel's weight, her 77,500 tons displacement exceeding that of any other ship by about 10,000 tons. And the *Queen Mary* has a longer waterline length—1,004 feet—than that of any other ship, yet she is several feet shorter than the longest overall. This can only mean that the *Queen Mary* has the greatest foundation or supporting size with relatively less superstructure to carry. Other things being equal, it is the primary factor of waterline length that determines added steadiness and speed.

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