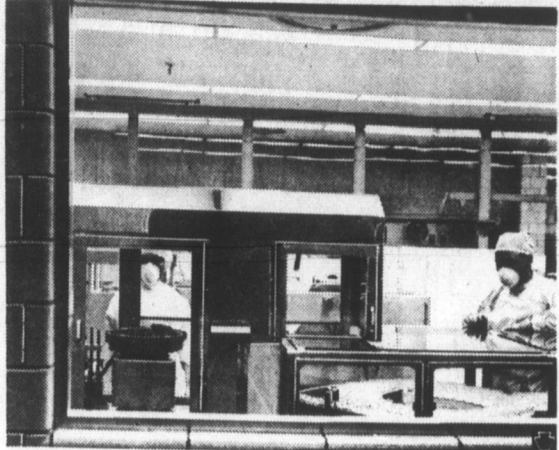


"Ingredient X"

There's More In A Drug Than Meets The Taste



(Upjohn Photo)

Packaging freeze-dried injectable drugs under sterile conditions. Germans and Mexicans want their medicines flavored with orange; Norwegians prefer anise.

Choosing the best flavor to mask any unpleasant taste is only one of the myriad problems the drug development scientist must resolve before a new product reaches the pharmacist's shelf.

A major concern: That the drug will be at full potency when the patient takes it and that it will work as well as the maker claims. The lengths to which drug manufacturers go to achieve this goal are spelled out in a new book, "Ingredient X".

Drug designers rarely achieve an ideal product. They may, for example, accept a somewhat shorter shelf life in order to get a better taste, or vice versa, says the author, Dr. L. C. Schroeter of the Upjohn Company, Kalamazoo, Michigan.

Safety is the one factor which is never compromised. Of course, there's no absolutely safe drug. Overdosing or prolonged use without a doctor's supervision may have serious effects.

Schroeter uses the blanket term "Ingredient X" to describe all of the so-called "inert" ingredients — flavorings, preservatives, dyes and the like.

Each of these components

as well as the drug itself are checked for safety in extensive tests with laboratory animals. Here are some examples of pharmaceutical know-how cited in the book:

1. Two incompatible drugs can be combined in the same tablet if they're separated by an inert layer.
2. Adding a wetting agent may improve drug absorption so much that the dose can be reduced.
3. Liquid drugs sensitive to light are protected by dyes whose colors absorb the wave lengths of light.
4. Even the bottle cap is checked for safety.

Schroeter sums up the exacting requirements: "The standards designed into the product must be maintained. The dosage form must maintain its full potency under normal storage conditions for the period of time indicated by the expiration dating. The product must also maintain the same consumer appeal as when it was first made."

Graduate To Sunvogues



Commencement time is here again, a happy occasion for many to think about a "little something" gift. Why not make that little something a pair of prescription-quality sunglasses? This gift suggestion comes from American Optical Corporation, maker of Sunvogues, distinctive sunglasses that absorb potentially harmful and discomforting ultraviolet and infrared light rays.

Charges Discrimination in Covington, La.

NEW ORLEANS, La. — Federal Judge Frederick R. Hebe has taken under advisement the charges of alleged discrimination against Negro students in the small town of Covington, La., just across the lake from New Orleans. One of the charges is that the Confederate flag is displayed in the principal's office and used in the lead of all parades.

They contend that this flag is the symbol of Negro slavery and discrimination. The Negroes also claim that Negro students are kept out of most activities of the school.

Another school in New Orleans, Nichols high school, has used the Confederate flag as their parade emblem and they clothe their band in Confederate soldier uniforms. On

Conference for Democratic Candidates Set

BOONE — State YDC President Robert Bingham has announced plans for the first Campaign Conference ever organized for North Carolina's Democratic Party candidates.

Bingham said the YDC-sponsored event will be held in Raleigh on Monday, July 13 at the Sir Walter-Sheraton Hotel. Working sessions will be held for State Senate and House nominees, county chairmen, YDC county presidents Democratic Women presidents and Teen Dem presidents.

Seminars will be held throughout the day on campaign management, money-raising programs, publicity and issues. Tentative arrangements call for a dinner to climax the day-long program with a nationally known speaker.

Co-chairmen for the conference will be Kenneth R. Babb, Winston-Salem attorney and Fifth District YDC president, and George Mast, an attorney from Smithfield, it was revealed.

"This conference reflects the determination of the State YDC to move from prestige politics to power politics," Bingham advised.

several occasions Negro boys have had to carry this flag in parades.



WIN TOP HONORS — Winners of the top awards in the army ROTC program at A&T State University are congratulated by the unit's commanding officer, Lt. Col. William Graves (left). The winners were (left) W. Levesiter, Jr., Thomas R. to right) James D. Cooper, J. Brown and Michael Hough.

Professor of A&T University Gets Fellowship

GREENSBORO — Mrs. Eva Moore, an assistant professor in home economics education at A & T State University, has been awarded a \$3,500 doctoral fellowship to the University of North Carolina at Greensboro.

Mrs. Moore will pursue her doctorate in home economics education in the School of Home Economics at UNC-G beginning in September.

Dr. Naomi Albanese, dean of the School of Home Economics, noted that the doctoral fellowship awarded to Mrs. Moore has been made possible through a grant by General Foods has provided the doctoral fellowship at UNC-G.

Mrs. Moore has been a member of the A & T faculty since 1967. She received her bachelor of science degree in home economics from West Virginia State College, and obtained her master of science degree from the University of Illinois, where she also has served as a research assistant. She has taught at Delaware State College, and also served as head of the home economics department there. In addition, she has taught in the city schools in Orangeburg, S. C.

She is a member of several professional organizations, including the American Home Economics Assn., North Carolina Home Economics Assn., American Vocational Assn.

Expo 70 Souvenir



Bank of America Travelers Cheques has introduced a commemorative package for its customers in Japan in the form of a souvenir Expo 70 certificate. The specially designed, four-color document shown by model Koko K. Luersen will be part of the bank's regular travelers cheques applications and will be available in Japan through Japanese bank sellers of the cheques during the Exposition in Osaka, San Francisco's sister city.

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THE COMBINE — Farming's Miracle Machine

GRAND ISLAND, NEB.— Each year there are more mouths to feed and fewer farmers to feed them than the year before. As the world population continues to skyrocket, the farm population is dwindling. Research into new foods moves ahead, but the old staples of life, wheat, corn and rice, have to be planted and harvested on hundreds of thousands of acres.

As an example, the world's farmers plant enough wheat to twice cover the entire land area of the state of California. The harvest of such fantastic crops is a constant challenge of modern agriculture—a challenge that farmers are answering with a "miracle machine".

That miracle harvesting machine is the self-propelled combine. It has taken up the slack of the harvest time labor shortage. Without it man could not harvest enough food to feed himself. He depends on this one invention to harvest his corn, wheat, barley, oats, rice, soybeans, grain sorghum, rye, flax, peas, clover, alfalfa, timothy, millet, dry beans, and even his cotton.

A combine, or the use of one, is a virtual necessity to the modern grain-crop farmer. Grain has to be cut and then separated from the stalk before it can be sold. This miracle machine combines these two processes, hence the name—combine.

Although relatively costly — price tags read from \$12,000 to \$20,000—giant combines more than pay for themselves in increased yield and labor savings. In fact, engineers here at the giant combine plant of New Holland, the farm machinery division of Sperry Rand, estimate that one combine-harvester gives a farmer the controlled efficiency of the labors of 300 men in the grain field.

The Toil of Harvest
The combine although revolutionary in effect, is the end product of an evolutionary struggle between man and the toil of the harvest. The first harvest was taken by hand. And, hand harvesting tied men to the land in subsistence agriculture for thousands of years.

Long before recorded history, primitive farmers, in what is now Switzerland were harvesting wheat. They used stone sickles and a grueling four or five hours of labor produced but one bushel of grain. These, and other simple hand tools were still the order of the day deep into historic times.

However, the concept of machine harvesting appeared much before one would believe. Pliny, the Roman historian, wrote during the first century A.D. that the people of Gaul harvested their grain with a box mounted on wheels that had knives set, like lances, out front. The box was pushed into a field by oxen, and the ears of grain were caught between the knives and sheared off, to fall into the box.



THIS EARLY COMBINE was a model popular with western grain growers. Operators called for a team of 15 men and as many as 40 horses or mules. Today's combine replaces the hand labors of about 300 men using antiquated harvesting methods.

workable device, this first machine harvester fell into disuse during the Dark Ages, and the mechanized harvest had to wait a thousand years.

In 1834, Cyrus McCormick patented his most famous of all harvesting machines, the reaper. Although primitive and made mostly of wood, the McCormick reaper revolutionized agriculture by cutting harvest labor time in half. A ground wheel supplied the power to the sickle-type cutting apparatus of McCormick's reaper. A revolving paddle wheel pushed the cut grain onto a delivery platform to be raked to the ground and tied into bundles, or sheaves.

Double the Harvest
Within the next several decades, the device was refined so that it could bind the sheaves itself. This tool represented another milestone in agriculture technology. The individual farmer could double, even triple, his harvest capacity. The work of six men could now be done by one man and a team of horses.

But as important as the reaper was, it is only half of the combine story. The missing element was threshing. After it was cut, the grain still had to be separated from the straw. For centuries man shook, beat and walked on grain to thresh it, but eventually crude machines were developed.

40 Mule Teams
Several attempts at combine harvesting were made in the midwestern United States, but California innovators finally developed the idea. After the Civil War, giant combine harvesters were used in the vast grain fields of the West Coast.

Early threshers, known as ground hogs, were stationary and operated by horse power or turned by hand. Later these were made portable and steam power was applied. And, eventually, all-steel threshers, powered by steam tractors or gasoline engines, became familiar sights on the farm at harvest time.

In the middle of the last century, it occurred to farmers to put the thresher on wheels and join it with the reaper. With this, the concept of the combine harvester was born.

The Harvest Brigade Rolls
The impact of the combine on agriculture was dramatically confirmed during the war years. A fleet of combines was ordered built by the U.S. government and the famous "Harvest Brigade" was formed. These combines swept across 10 states to harvest 25 million bushels of grain in one season. The brigade saved a third of a million manhours and a half of a million gallons of scarce fuel a year in a unique contribution to the war effort.

These machines weighed as much as 15 tons and required 40 mules to operate, but they worked.

During the last half of the century the combine was refined and scaled down to practical size. By the time another generation took over the country's farms, the combine had driven the reaper into obsolescence.

By 1940, with the addition of self-propulsion and the internal combustion engine, the machine took the shape of modern combines that today are so vital in producing high grain yields.

Custom operators today
Don Bolsted is one such custom operator. Headquartered in Homestead, Montana, Bolsted harvests thousands of acres of grain each year. His caravan includes three New Holland combines, several grain trucks, a service truck with an inventory of 3,000 parts and two house trailers.

To make certain custom operators can keep moving, New Holland has equipped a giant parts service van to move northward with the harvest. Custom operators, like Bolsted, and grain producers, like the men he works for, have used this one miracle machine to change the shape of the harvest. No longer do sheaves of grain rest idly in the autumn field. Instead majestic combine harvesters glide through ripened grain.

The combine, because it dramatically ended the dawn to dusk toil of the harvest, has helped push man within reach of the defeat of famine.



MODERN COMBINES can be fitted with a variety of attachments for harvesting different crops. This combine, a New Holland model 985, is equipped with a windrow pick-up header for grain crops that were previously cut and windrowed. Other headers cut crops directly and feed them into the combine.

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