

DUPONT

AUG. • SEPT. • 1946

MAGAZINE



Cover: "DUCO" Transformagic



BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY

TODAY *is the age of* MAN



WE HEAR our age called the machine age, the chemical age, the age of invention, the age of science.

Which is it? It doesn't really matter. More than ever before, history is proving that today is the age of MAN! It is the day of man's greatest expansion of spirit, of opportunity.

Back of every great chemical or industrial development is the man who had a dream that it might come to pass, the hundreds, sometimes thousands, of men who work to make that dream come true.

Du Pont believes in MEN.

Believes in the men of Du Pont—hard at work with brain and hand on a thousand and one products that today or tomorrow may add up to more comfort, more satisfaction, more joy in living for millions.

Believes in the men of the future! We are

backing up that belief in two ways—by encouraging promising young scientists through Du Pont Fellowships in advanced scientific study at American universities. And by going ahead with plans for plant expansion that, when completed, are expected to result in an all-time high in peacetime employment.

Never before in Du Pont history has such a wide variety of research projects engaged the attention of Du Pont scientists. Dreams, all of them, that look toward better things for better living—the translation of the visions of a few men into the practical satisfactions of many.

It would be useless to shrug off the fact that America today is beset with many and weighty problems. But more than any other nation under the sun we have the solution for the problems in the minds and the hearts of our people.

Du Pont believes in MEN.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY



E. I. DU PONT DE NEMOURS & CO. (INC.), WILMINGTON, DEL.

So to speak...



MEET Peter Hunt in his Provincetown, Mass. workshop, where a hobby of transforming outdated furniture into showpieces grew into a thriving business, and started a new vogue in home decoration. Almost all Peter Hunt peasant designs, such as you see on the cover, are composed of variations of a simple, basic brush stroke, and much of the charm of the finished work lies in its irregularities of pattern.

This colorful front cover is ours through the courtesy of the Ziff-Davis Publishing Company, of Chicago, who publish "Peter Hunt's Workbook," which is available at most bookstores.

The Du Pont Finishes Division has a Peter Hunt booklet entitled: "Transformagic," which shows how anyone with an adventurous spirit, a brush, and some "Duco" enamel can brighten the home and give a new

lease on life to old furniture. This booklet is yours for the asking at your local Du Pont paint dealer's store.

THE DU PONT COMPANY has ended its connection with the atomic energy research and development program of the War Department and will transfer the responsibility for operation of the \$377,000,000 government-owned plant at Hanford, Washington, to the General Electric Company. This transfer is effective about September 1, 1946. The Du Pont Company's action is in line with its intention, expressed when it agreed to undertake the project in 1942 at the urgent request of the government, to retire from the program as soon after the end of hostilities as was consistent with the government's plans. The decision is based on the fact that the atomic energy program, in its peacetime aspects, lies primarily in the field of power generation, and only to a limited extent in the chemical field in which Du Pont has always worked.

DU PONT MAGAZINE

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AUGUST-SEPTEMBER, 1946

E. R. MANCHESTER, Editor

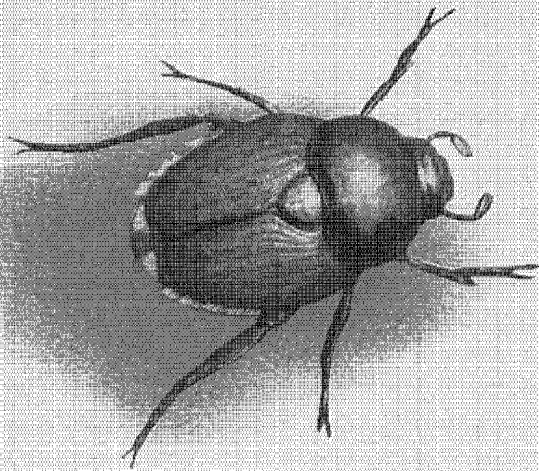
R. J. WOODRUFF, JR., Managing Editor

Contents

DDT YESTERDAY AND TODAY	2	BARRIER AGAINST GERMS	18
Much of the glamor, and misapprehension about this insecticide is dispelled in the cold light of research.		Cellophane packaging performs a vitally important service in helping control the spread of infection.	
ACTION! SPORTS!	6	KEEPING THE LOGS ROLLING	20
Du Pont neoprene, synthetic rubber, is becoming popular as a material for game balls and sports equipment.		"Timber is a crop—the harvest is homes."	
POLYTHENE IN "CIVIES"	9	THE GOLDEN EGG	22
This war-seasoned plastic can help industry with its peacetime problems.		The Du Pont Company race-see trophy and citations from New Jersey poultrymen.	
NEW COLOR EFFECTS FOR AUTOMOBILES	12	"CAVALCADE" ENTERS 11TH BROADCAST YEAR	23
"Duco" Metalls-Chromes set a new standard of beauty and dependability.		Du Pont radio program returns to the air August 26th. Past season earns three awards.	
FREEDOM FROM INSECTS WITH "FREON"	15	WHAT'S NEW	24
This refrigerant used as an insecticide propellant promises to be of service to the housewife, the farmer, and industry.			

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IT IS REMARKABLE that such headlines as "Great Naval Battle At Midway", during the war, shared front page newspaper space with such headlines as "New Miracle Insecticide—DDT."

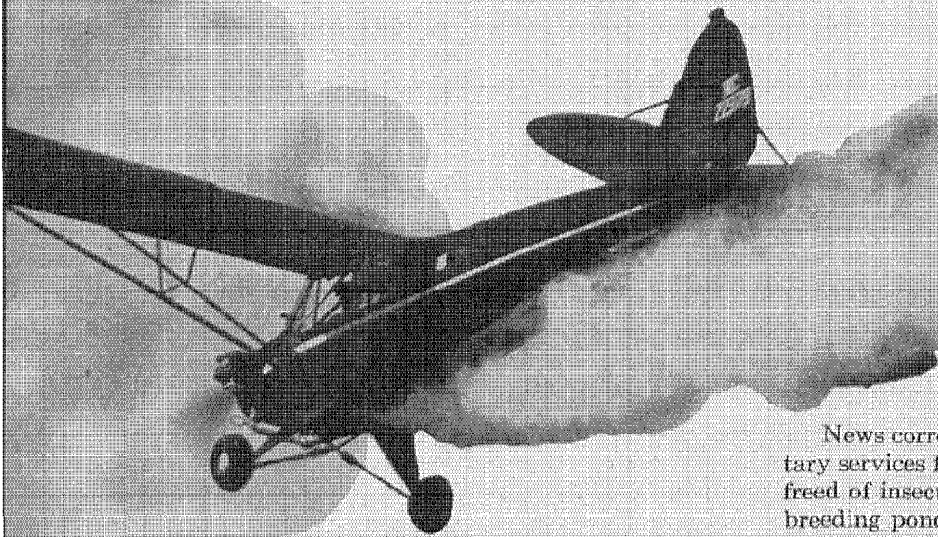
Since time immemorial mankind has been plagued by insects. We have our share of them in the United States, but in many countries—particularly tropical countries—they are a far worse plague than they are here. The writer of this article, for example, once lived for a time in North Africa, in a village of clay houses on the North Sahara. The name of the village was *Bou-Saada*, which means "Father of Happiness;" but its residents were not especially happy—and insects were one of the reasons. It was a common occurrence there to see swarms of flies crawling across the eyes of small babies, while the parents made not the slightest effort to whisk them away. The babies often went blind, later on; but the general feeling was a disheartened, "Oh, what's the use?" . . . In the war between insects and man the insects had won hands down. There were just too many of them.

DDT offered new hope: new hope for India, for China, for Siam, as well as for countries like our own in the temperate zones.

The accounts of the armed forces' experience with DDT which were published in the newspapers and magazines were almost too good to be true.

DDT YESTERDAY AND TODAY.

By GEORGE ALBEE



News correspondents attached to the various military services filed enthusiastic stories of whole islands freed of insects by spraying from the air; of malaria-breeding ponds and swamps made insect-free simply by tossing in a burlap bag filled with DDT-soaked sawdust. The correspondents were known and trusted reporters, and Army and Navy officers added fervent

words of relief and praise. Superlatives flew faster than the insects themselves. Best of all, it was said that a single application of the new "miracle" insecticide, as it was called, lasted for weeks, even for months.

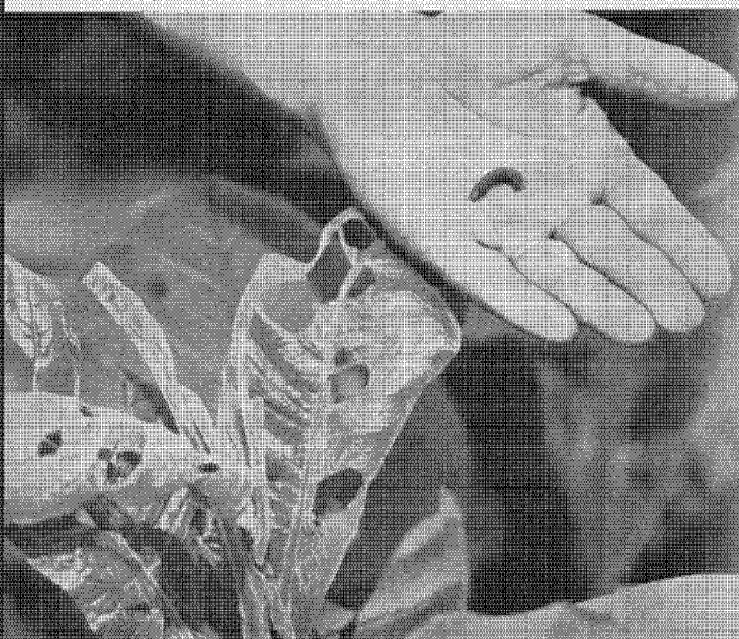
The great progress made in industrial chemistry during the past twenty years has created an ever-growing interest, on the part of the public, in new chemical developments. Women were eager to buy nylon stockings, for instance, even before the first nylon yarn reached the stocking manufacturers' shipping rooms. Much the same sort of thing took place with DDT. The reports of its effectiveness, coming back from Europe and the South Pacific, were so loaded with praise that a pent-up demand for the compound was created while exploratory and by no means conclusive field-trials were still going on.

But this premature interest was unfortunate, to a certain extent, for the intense public enthusiasm brought pressure to bear upon insecticide manufac-

Du Pont manufactured DDT in quantity for the Armed Forces who used it to combat sand-fly fever and typhus, among other insect-borne diseases. So it was only necessary to intensify research that was already well underway. Tests were made both in the laboratory and in the field, and facts gathered by the Du Pont investigators were correlated with the information of military and Government agencies. By the war's end, Du Pont had acquired a comprehensive knowledge of the new insecticidal compound.

Today, enough is definitely known about the action of DDT to permit Du Pont to offer the advantages of more than three years' research and production experience to insecticide manufacturers. The Du Pont Company is supplying technical information and assistance to such manufacturers to help them in the task of supplying the public with DDT formulations for specific needs.

These manufacturers have played an important



Widely used in agriculture, DDT helps control many crop-damaging pests, such as the cabbage looper, and the Japanese beetle.



Fruit growers, too, are looking to DDT as a more efficient control for many hard-to-kill insects which continually plague them.

turers, and upon the chemical manufacturers to whom they looked for their supplies of the new compound.

Scientists in the laboratories of the Du Pont Company, and in those of other reputable manufacturers, however, felt that what was required was an investigation which would not delay the introduction of DDT to the public too long, but which would be thorough, objective and conclusive.

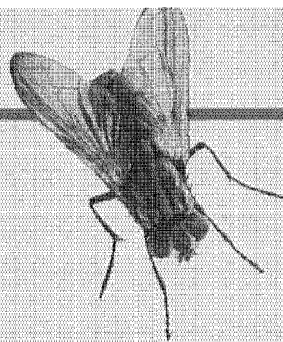
As it happened, the Du Pont Company was well advanced in its DDT research program. Our laboratories had been studying the compound ever since its value as an insecticide had been discovered by the Geigy Company in Switzerland. Throughout the war,

and praiseworthy part in readying DDT compositions for general use. Scattered throughout the forty-eight States as they are, they are keenly and constantly aware of the importance of formulating adequate compositions for all purposes. Their long experience, their special and practical kind of "know-how" has been of the highest value.

The reputable insecticide manufacturer, whether his name is nationally or only locally known, performs a highly valuable service. His product may have an old and trusted name. Or he may operate in an area with a serious local pest problem—one which his locally compounded product is specifically designed to



Brushed or sprayed on, liquid DDT dries quickly, leaves an invisible coating that kills insects as they come. Can be applied in the home on screens, walls, floors, ceilings, and elsewhere. DDT dusts are effective for cracks and hard-to-get-at places around the house.



control. To such a manufacturer the Du Pont Company supplies DDT as a chemical for his own compositions, as well as in specially prepared concentrations and combinations, blended with preferred diluents and solvents.

In selling insecticides containing DDT, manufacturers make it possible for people everywhere to profit from the unique advantages of this remarkable insecticide. Du Pont extends its facilities and technical aid to these manufacturers, and cooperates with them to the end that reliable DDT compositions may be provided for use in the home, on the farm and in industry. In addition to supplying DDT Technical to insecticide manufacturers, Du Pont packages several DDT compounds for home, farm and industrial consumers.

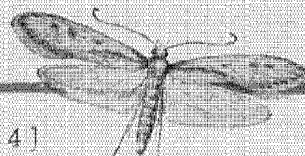
THE HOME

The insecticides of the past generally reached the home-owner in one of two forms—as powders for dusting, or as liquids. Usually the liquids were used as space sprays, which is to say they were sprayed into the air or directly at the insects.

The advent of DDT makes such space sprays much more effective. One of their faults in the past, for instance, was that though they knocked flies and mosquitoes quickly out of the air the insects sometimes sprawled on the floor for awhile and “came back to life.” The addition of even a relatively small amount of DDT to a space spray does away with this weakness. Knocked out of the air by the paralyzing agents in the liquid, the insect at the same time gets a dose of DDT—and, when he goes down, he goes down for good!

But along with the space sprays there is another type of liquid insecticide on the market, now, in which DDT is the principal killing-agent. The new liquid is also used as a spray, but when you use it you do not aim the spray-gun haphazardly into the air. Instead, you spray *surfaces* with it—ceilings, walls, electric fixtures. Drying, these new sprays leave a residue on the surface. (Hence the name “residual.”)

This residue, clinging to the surface in the form of fine crystals, remains active for weeks and, in some cases, months. When they contain paralyzing agents such as the pyrethrins, these new residual sprays knock insects out of the air as quickly as the old type



space sprays. But it is their long-time killing power that makes them so much more advantageous than space sprays. They do *both* jobs better.

What makes DDT especially desirable for the home-owner is that homes can be kept free of insects all summer if insecticides containing DDT are properly used. The discomfort and the chore of constant spraying—which was necessary before DDT—belong to an older day. Of course, a house in which doors are carelessly left open and windows left unscreened will still have many unwelcome little visitors from the great open spaces. DDT solution painted on a screen will kill insects that light on the screen—but all the DDT in the world will not screen an open window.

Du Pont makes two DDT products for the home. First, a spray containing 5% DDT plus pyrethrins for use in spray guns. Second, an insecticide dust also containing 5% DDT plus pyrethrins and rotenone

to use the new compound inside buildings such as cowbarns? How about chickens? In preening themselves, chickens might swallow some of the compound: would powder or oil be safer? Could DDT be mixed with other agricultural preparations? . . . These questions and dozens of others had to be answered conclusively. And only exhaustive research could provide the answers.

On the basis of thoroughgoing studies, the Du Pont Company now offers the farmer four formulations of DDT under the trademark "Deenate"—two wettable powders, a ready-to-use dusting powder and an emulsifiable oil. (A fifth "Deenate" powder compound is sold to manufacturers of insecticide dusts for farm use.) Depending upon the compound chosen, these "Deenate" formulations control insect enemies of fruit, vegetable and other crops; control flies, mosquitoes and ants in farm buildings; protect livestock



● *The residual, long-lasting effect of DDT in all types of buildings is one of its outstanding characteristics as an insecticide.*



● *Laboratory and field research has fully established the effectiveness of DDT for controlling many important livestock pests.*

for cracks and crevices difficult to reach with a spray. This powder is also a more convenient and effective means of controlling insects such as ants, which carry it back to the ant-hill on their feet. And the powder may be used to kill fleas on dogs.

THE FARM

With long years of experience in the manufacture of agricultural chemical compounds, Du Pont realized early that DDT would have to be provided in not one, but many formulations for the farmer.

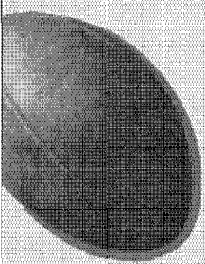
What would be the most effective way to apply it to livestock harassed by insect parasites—and the safe way? What would be the best and cheapest way

against lice, ticks and horn flies; safeguard stored seed and grain and protect trees and ornamental shrubbery. This, of course, is only a partial list of the things they accomplish on the farm.

INDUSTRY

Industry, too, had long been wishing for a better insecticide, and when the first reports of DDT's extraordinary effectiveness reached the United States during the war many a plant superintendent wrote to Du Pont, "How soon can I get some?" But here, again, Du Pont thought it wiser to move cautiously. The word "industry" covers a multitude of activities. The lumber business is industry, for instance and

(Continued on Page 24)



ACTION! SPORTS!

By GEORGE ALBEE



SPANISH AND PORTUGUESE historians, writing of the New World, told how Columbus, on his second voyage of discovery, saw the natives playing games with bouncing balls made of the juice of trees, and how Emperor Montezuma in 1520 A.D. entertained Cortez and his soldiers in Mexico City with a game played with balls of caoutchouc which we now know as—rubber. Excavations of ruins in Central and South America have led scientists to believe that the same substance was known to the Indians of America as early as the 11th Century, if not earlier.

Their rubber, of course, was gummy, sticky latex, right from the tree, perhaps hardened a bit by the heat of the sun. Untreated rubber is not a very satisfactory material, as manufacturers learned when they first tried to make raincoats, boots and shoes out of it—the “gum shoes” which only survive, today, as a slang term for police detectives. Rubber did not come into its full usefulness until Charles Goodyear discovered that it could be heated, or “vulcanized,” in the presence of sulfur. This was the beginning of rubber chemistry, which has now become a broad field of science in itself.

Rubber, the vulcanized natural material, has long been used in the manufacture of sports equipment. Golf balls that will fly three hundred yards depend for their resiliency upon a rubber core wound with thin rubber ribbon; handballs are made entirely of vulcanized rubber. Such games as basketball, volley ball, water polo, soccer and football would be a good deal less exciting if it were not for the springy, inflated rubber “bladders” in the balls. Indoor baseballs have a core of rubberized yarn, and tennis balls have a hollow rubber shell which contains gas under pressure.

Basketball players wear rubber-soled shoes. Football players wear shoes with rubber cleats. And so it

goes . . . While it would be an exaggeration to say that most of our current popular sports would be impossible without rubber, it is certain that many of them would be very much changed in character. The games would be less fun to play and less interesting to watch.

But rubber, good as it is, has inherent disadvantages which in the past have made it a less-than-

perfect material for sporting equipment. It deteriorates when it is very long exposed to sunlight, for instance. And oil and grease cause it to "go to pieces"—as does the oxygen in the air, although more slowly. Rubber, while it appears to the naked eye to be a solid film, in actuality is honeycombed with microscopic passageways which allow air or gas to pass through it quite easily. Thus a ball with a bladder of natural rubber must be inflated every few days.

In recent times, by one of those odd repetitions sometimes found in history, science again utilizes an advance in knowledge to improve the material used in game balls. Neoprene, Du Pont's contribution to the synthetic rubber industry, is finding a welcome in the field of sporting goods because it does not have many of these defects.

In part, this is a result of experience gained in this field during the war. Natural rubber was not to be had, then, and sporting goods manufacturers turned to neoprene—as they thought at the time—as a substitute material. But they soon learned that neoprene's own qualities actually made it better for their purposes in some respects than the natural product. So today more and more manufacturers are using neoprene.

In balls used in the many kinds of ball games popular in the United States, neoprene offers one of the greatest improvements. As you know if you or your kid brother ever got a football for a Christmas gift when you were in your early 'teens, such balls generally have to be blown up every week or so. Slowly but surely, the air leaks out of them through the pores of the rubber "bladder." And the job of blowing up the bladder may involve a lengthy business of unlacing the outer cover and then lacing it again.

A neoprene bladder leaks air very little, if at all. It stays hard much longer. Manufacturers of footballs, basketballs, volley balls, tether balls, soccer balls and water polo balls are now using neoprene bladders. Not only do they hold the air longer, but they are extremely tough and rugged, able to take a great deal of heavy punishment. The outer covering of the basketball offered by one manufacturer is also made of a neoprene-impregnated fabric, over which leather is glued with neoprene cement. There is a volley ball, too, which is constructed in the same way to take advantage of neoprene's toughness. Other basketballs and volleyballs are made with a molded neoprene cover.

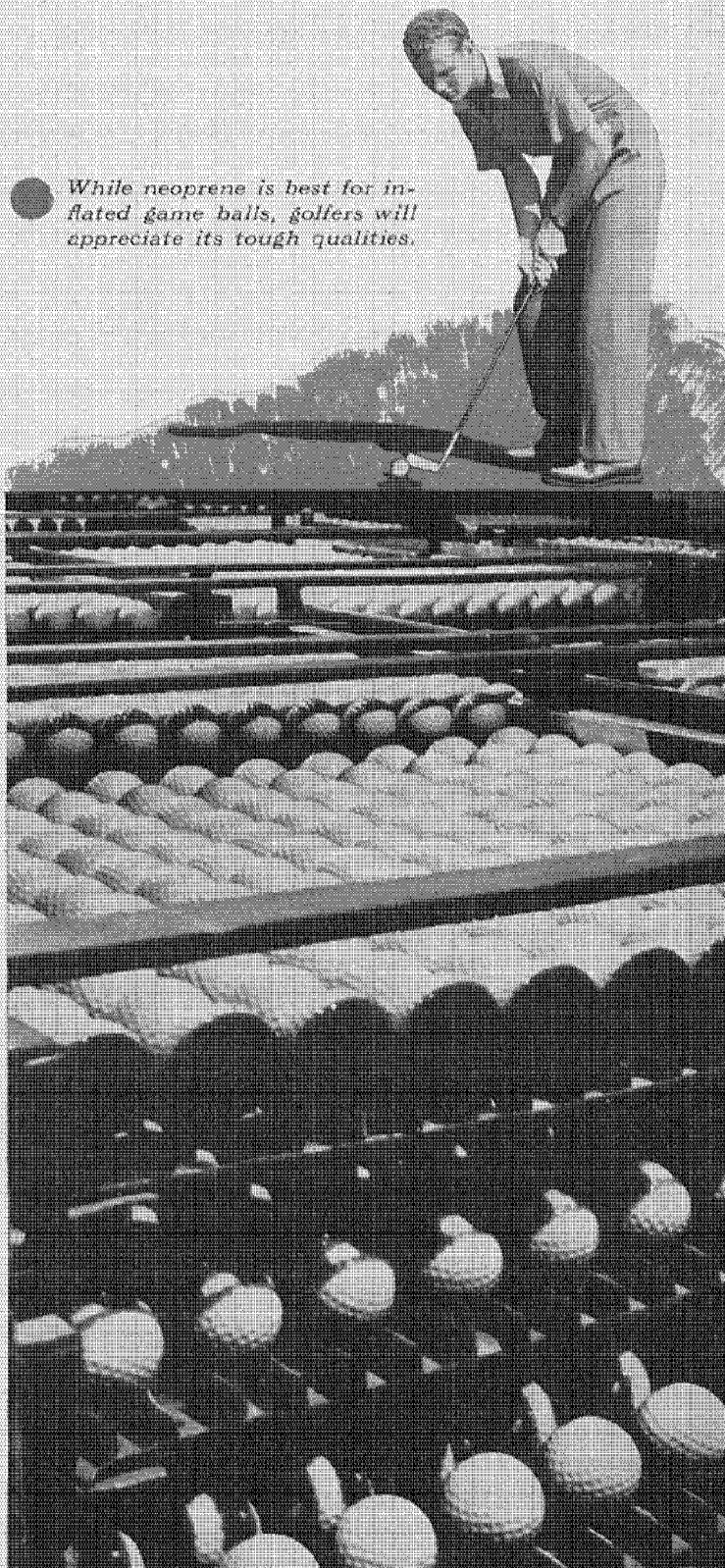
The stuffing of an indoor baseball is not really a stuffing at all, but a core of yarn or twine wound round and round "every which way." To give it springiness, this yarn is coated with resilient "dope;" and neoprene has shown itself to be very well suited for the purpose. Quite a number of soft balls now on the market have molded neoprene covers as well. Handballs and field hockey balls also make use of neoprene.

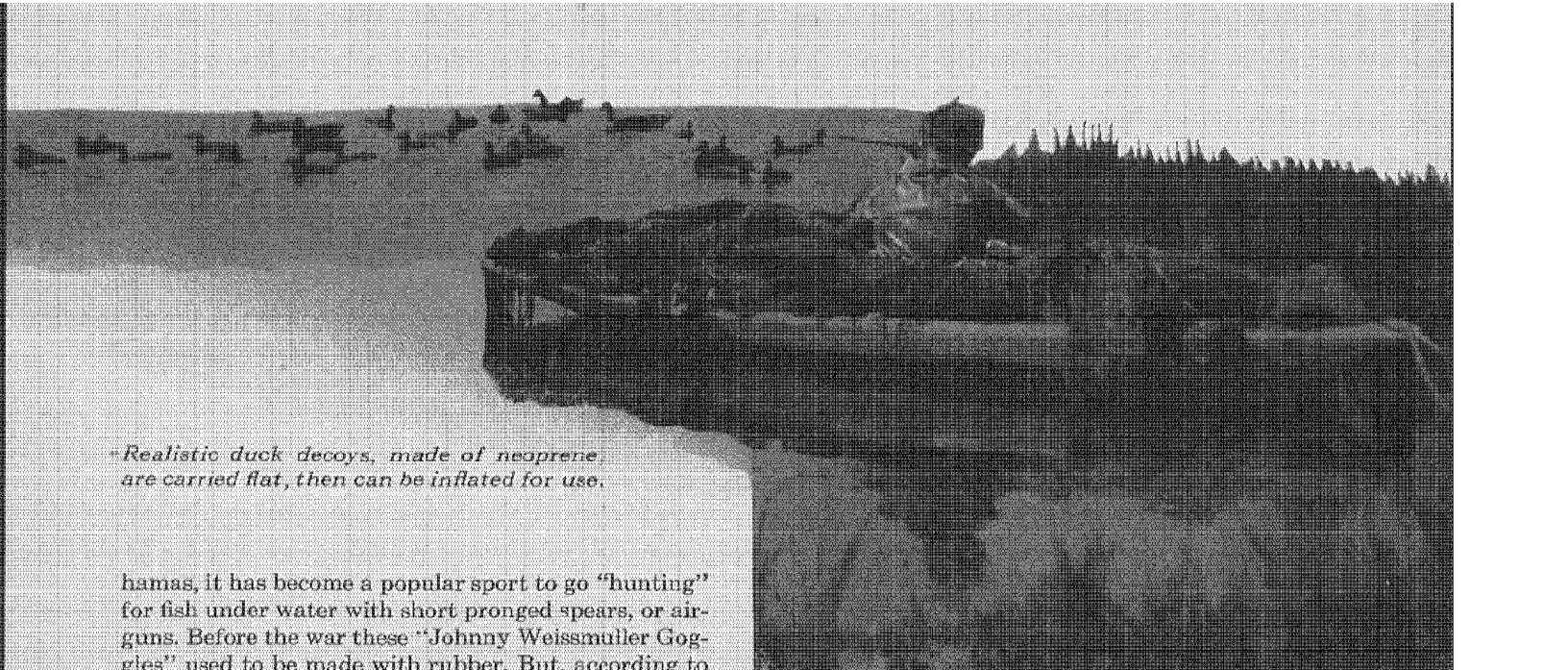
And last of all, not to be ignored is the gayly colored beach ball, which furnishes the incentive for fun and exercise for that day at the beach. Here neoprene contributes not only superior air-retention but an imperviousness to the sun's rays which soon deteriorate an ordinary rubber ball. In fact neoprene offers advan-

tages for all sporting equipment used at the shore. On the market now are neoprene ear-plugs, for swimmers and divers who are troubled by getting water into their ears. Bathing-caps of neoprene latex are still in the development stage, but one manufacturer is making a bathing cap of molded neoprene.

And Johnny Weissmuller of movie "Tarzan" fame has helped to design a face-mask for under-water swimming and fishing. In California, and even more so in the clear water of Florida, Bermuda and the Ba-

While neoprene is best for inflated game balls, golfers will appreciate its tough qualities.





**Realistic duck decoys, made of neoprene, are carried flat, then can be inflated for use.*

hamas, it has become a popular sport to go "hunting" for fish under water with short pronged spears, or air-guns. Before the war these "Johnny Weissmuller Goggles" used to be made with rubber. But, according to the manufacturer, the rubber soon turned soft and spongy under the combined action of immersion and hot sunshine. Today neoprene is used in place of the rubber, and the difficulty has disappeared.

Two kinds of portable boats make use of Du Pont neoprene. One is of neoprene-impregnated fabric cemented with neoprene tape. It is designed to be inflated like an inner tube. The second, of different construction, is made of plywood with seams covered with a neoprene-impregnated fabric. It can be folded flat for convenience in carrying on the roof of a car, for instance.

Portable boats of this sort are often used for sport at the seashore and on inland ponds, lakes and rivers. They must be able to withstand a lot of rough treatment, especially at the hands of youngsters. And this is where neoprene proves highly advantageous in their construction. Harmed very little by sunlight, and resistant to snagging and the abrasion of sand and stones, neoprene offers greater durability. Portable boats are used, also, by duck hunters. For such hunters neoprene offers another innovation—one which may

save them a great deal of inconveniences. The duck decoys which hunters use have been made, traditionally, of wood. Now they are being made of neoprene latex. They can be carried flat and restored to shape just before they are put into the water.

The sporting-goods field is a new one for chemically-made rubber, and one in which it is finding a place on its own merits. It is still too early even to suggest a full list of all the sports items in which neoprene may eventually be used. But, already, it has been adapted to articles as divergent as molded rings for ski poles—since this Du Pont synthetic rubber is flexible at low temperatures—and caps for sportsmen's vacuum flasks. It is safe prediction that more and more sporting goods will take advantage of the unique properties of tough, long-lasting neoprene.

Neoprene-impregnated fabric makes durable portable boats and air mattresses for aquatic sports.



POLYTHENE IN

"Civils"



.....
• *This war-seasoned plastic can help* •
• *industry with its peacetime problems* •
.....

By T. R. SNYDER

FOR SEVERAL MONTHS Du Pont polythene, released from restrictive war-production allocations, has been finding its niche as one of the great plastics in the peacetime competitive world. It is being employed in more and more consumer applications. Its future seems reasonably assured.

Discovered in the laboratories of Imperial Chemicals Industries, Ltd., of Great Britain, polythene was pushed into the war effort as early as 1941. On this side the Du Pont Company carried forward the processing and development work and manufactured large quantities of the material for military needs on all of the many fighting fronts.

WHAT IS POLYTHENE?

Chemically, it is a solid hydrocarbon polymer obtained by polymerizing ethylene, which is a colorless and almost odorless gas derived from coal, petroleum, natural gas, or alcohol. Structurally, the polymer is simply a chain of carbon atoms, each carrying two atoms of hydrogen. Prior to 1936 the polymerization



of ethylene resulted in only liquid and semi-solid products. Then British chemists by employing a high-pressure synthesis technique succeeded in making solid polymers.

Production of this thermoplastic requires pressures probably higher than those used in any other industrial chemical process, but the product resulting has justified the means. For polythene is a material of unique characteristics and properties. Thin sections of it are non-rigid, but not rubbery or limp. Thick ones are

substantially rigid. By reason of its crystalline structure unmodified polythene is a waxy white, translucent material, but thin sections, if quenched, may be made transparent, and it can be produced in many opaque colors.

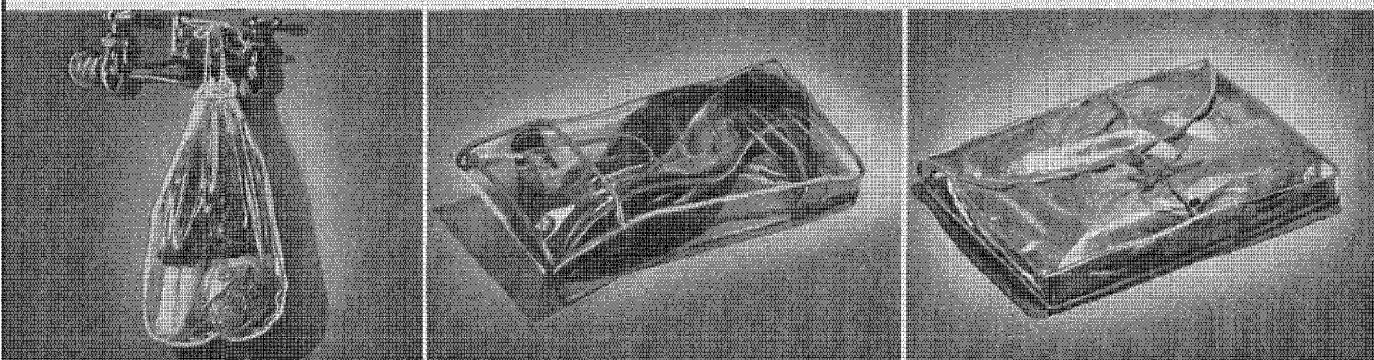
For many purposes polythene is compounded with compatible resins and waxes. For instance, the introduction of certain materials reduces rigidity, and waxes are used in the preparation of adhesives. This plastic, an extremely adaptable material because of its singular properties, can be modified to meet a wide range of requirements.

Polythene rates high in dielectric strength. It is one of the lightest plastics in commercial use; in fact, it is lighter than water. Yet it is water-repellent, with a moisture absorption rate of less than 0.005 per cent. It withstands temperatures as low as -50°F . without becoming brittle and remains stable at 220°F . And it is tough, flexible and abrasion-resistant. The fact that

mountains, deserts and plains. Frequently, to establish 'phone service 600 yards ahead of a command post, they had to transport the wire, not directly, but deviously and under enemy fire for three or four times that distance. Polythene insulation, because of its light weight, permitted them to carry larger coils of wire, and because of its low electrical transmission loss, the talking range was increased considerably.

It is hoped that polythene may never be needed again to insulate assault wire: there are so many constructive non-military uses for it here at home. For example, consider television transmitter and receiver cables which are now being insulated with polythene. While the current passing through the transmitter cable changes direction at the rate of 100 million cycles per second, the non-polar molecules of polythene are not influenced by the oscillations, no matter how rapid they may be.

In television receivers polythene is employed to



Resistance to tearing, and low rate of moisture transmission makes polythene highly desirable as a packaging material for items like these.

polythene can be injection or compression molded or extruded to form sheets, rods, tubes and monofilaments, and that coatings of it can be applied to metals, wood, glass, plastics or paper by flame spraying, will suggest why Government authorities preempted this plastic for war needs.

Polythene first won fame as an insulating material for assault wire, shipboard fire-control cables and sweep voltage-indicator cables. U. S. Army Signal Corps men who had to prepare communication systems soon learned of polythene's virtues while installing telephone lines through swamps and jungles and over

insulate the lead-in cables between the antenna and the instrument, thus preserving the strength and clearness of the images and eliminating attenuation and distortion. Because of the remarkable dielectric strength of this plastic, only a thin coating is needed and this provides a saving in weight and material.

Polythene for electric-wire insulation alone represents tremendously expansive fields, but there are others in which this plastic can serve with equal distinction. Consider today's raincoats that are worn over summer clothes, or winter overcoats in inclement weather. Made of light-weight, tough polythene, these coats and capes, with matching hoods and scarfs, are fully protective against rain and wind. Moreover this tear-resistant rainwear is flexible enough to drape well or be folded compactly for carrying or storage.

OTHER APPLICATIONS

The extraordinary properties of polythene make this plastic well adapted for shower curtains, garment bags, bowl covers and packaging film. Its tear strength—a hole punched in the film does not run—and its extremely low rate of moisture-vapor transmission account for its use in bowl covers, cigarette cases or packages that keep tobacco, foods and other perish-

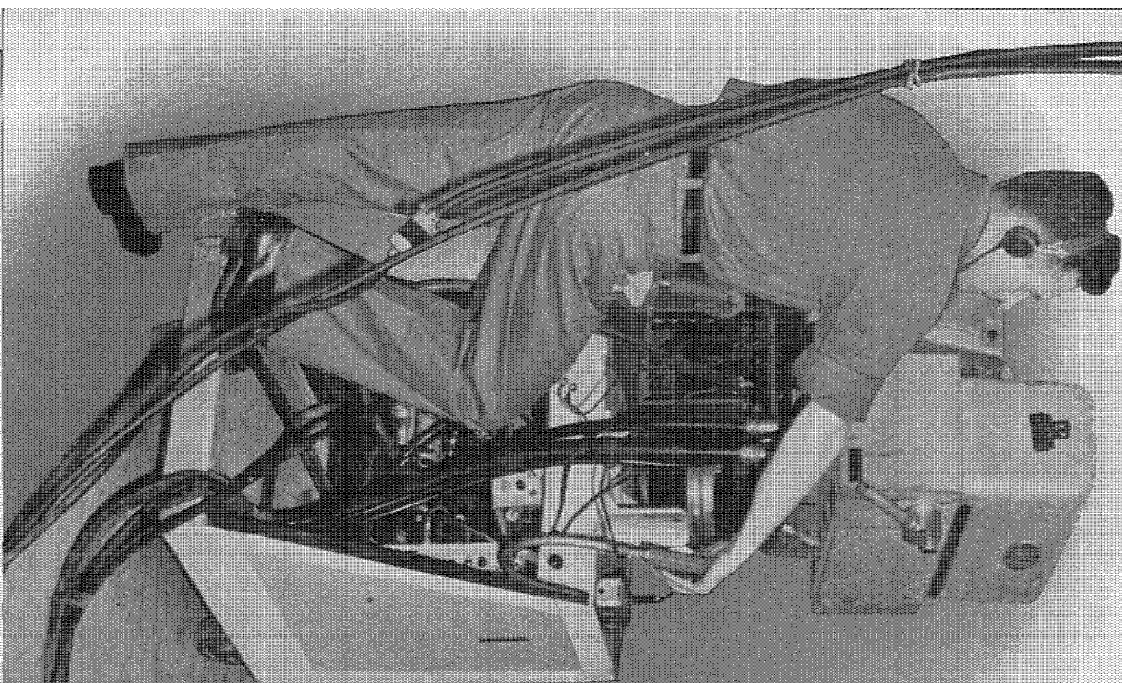


electroplating tanks and racks; hunting harness; hose linings, battery jars and protective aprons and clothing—all because of the chemical inertness and solvent resistance of this plastic.

Polythene may be used as an impregnant or coating for paper, cloth or wood; for example, it is well suited for use in paper milk containers.

It will protect undersea electrical cables from salt-water corrosion, and in the form of protective coatings for metal parts will resist brines or brackish swamp

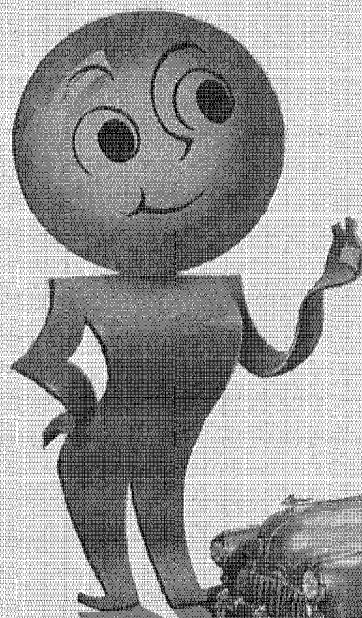
Cable insulated with polythene is used to hook-up television camera to control room and transmitter.



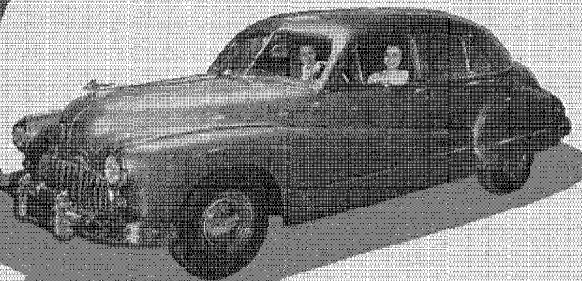
and sheets and baby pants because of its non-water properties it will probably have medical applications. In the electrical equipment field where this plastic first won distinction, it will of course continue to find uses in condensers, coils, spacers, insulating knobs and buttons as well as in the insulation of high frequency wires and cables.

With a brilliant war-service record, Du Pont polythene seems destined to go far and serve well in our nation's industrial peacetime economy. It has proved its worth the world over and certainly deserves a high place among the "Better Things for Better Living . . . Through Chemistry."





This whimsical character is "Mr. Metalli-Chrome" who symbolizes the new "Duco" finishes.



NEW COLOR EFFECTS FOR AUTOMOBILES

By DR. HERBERT E. EASTLACK

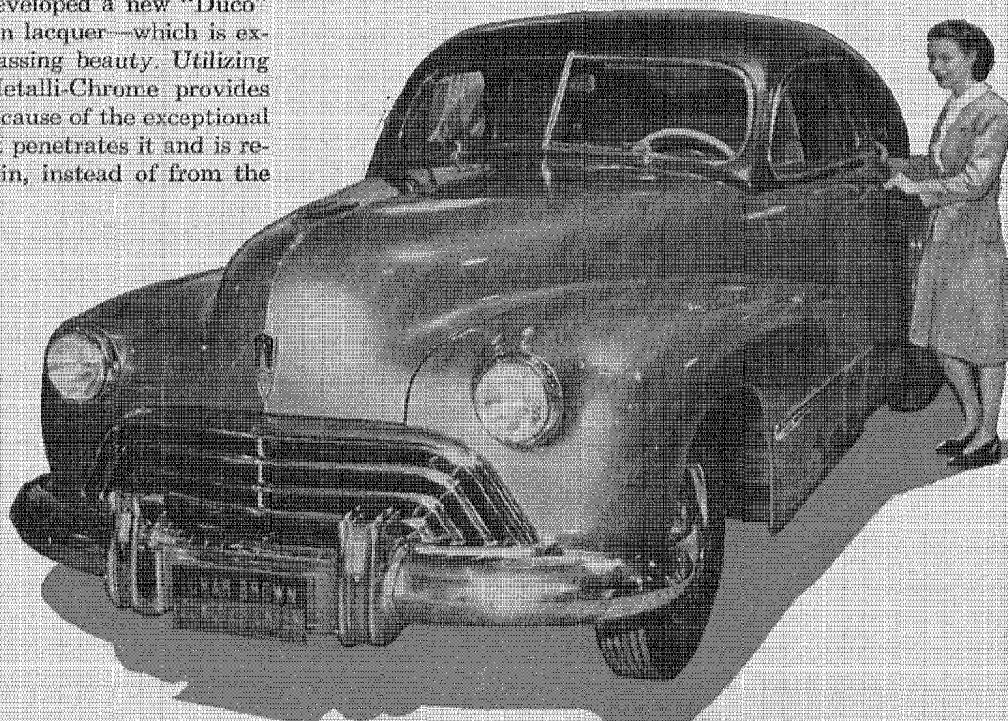
"Duco" Metalli-Chromes set a new standard of beauty and durability

surface of the finish. The glowing effect is enhanced by small particles of aluminum which act as tiny mirrors, diffusing and reflecting light within the film.

This new finish in various shades and hues was exhibited to the press and automobile manufacturers at Detroit, early in May. Eleven 1946 models were displayed—Buick, Cadillac, Chevrolet, Ford, Hudson, Lincoln, Mercury, Nash, Oldsmobile, Packard and

DU PONT CHEMISTS have developed a new "Duco" Metalli-Chrome pyroxylin lacquer—which is extremely durable and of surpassing beauty. Utilizing new pigment techniques, Metalli-Chrome provides rich, lustrous color effects. Because of the exceptional translucency of the film, light penetrates it and is reflected to the eye from within, instead of from the

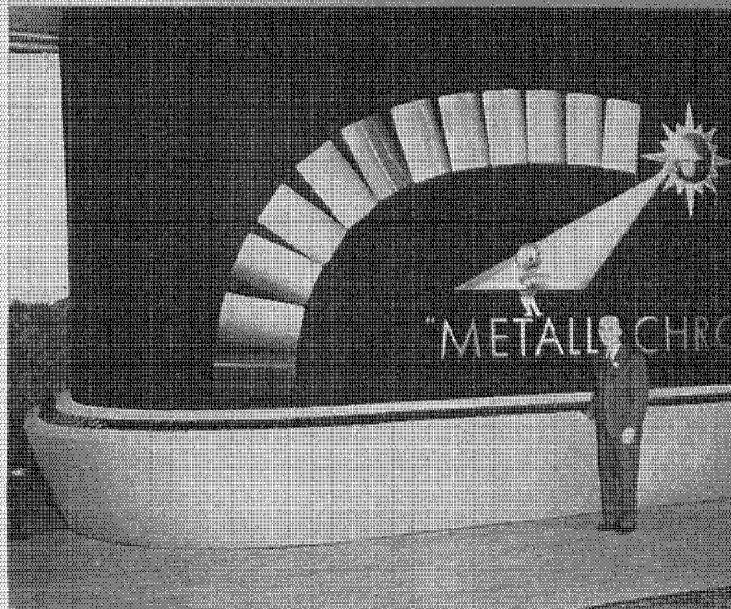
"Duco" Metalli-Chromes present a startling color variation as the lighting alters or the angle of vision shifts. This 1946 Oldsmobile was especially finished for Detroit Metalli-Chrome Pre-View. Metalli-Chromes are not available on any stock model cars at present.



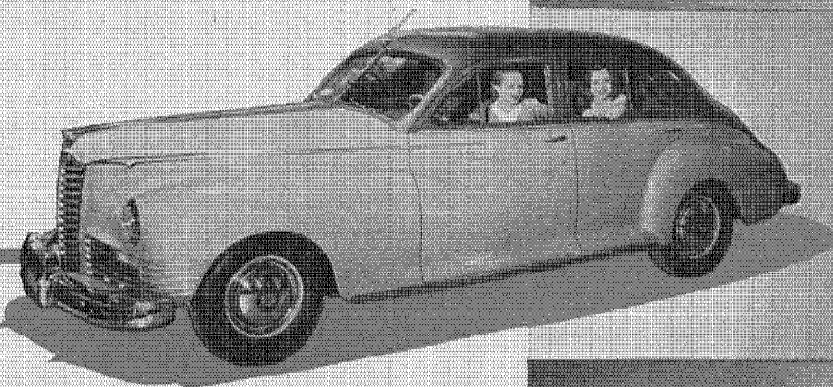
Pontiac. Also shown in a rainbow arrangement were more than 200 grays, greens and browns comprising the Metalli-Chrome color "families."

These translucent metallics, moreover, present to the eye a startling color variation as the lighting alters or the angle of one's vision shifts. For example, a reddish-brown changes all the way over to gray-brown. Burnished gold and shades of bronze are in the gamut of new colors. What appears to be a deep black in subdued light becomes a warm gunmetal in the sun.

"Duco" Metalli-Chrome was developed in the same Du Pont laboratory at Parlin, New Jersey, where the original "Duco" lacquer was born in 1923. From here "Duco" metallic lacquers were also introduced in 1935, creating a new range of color effects. The evolution continued with the advent of translucent metallic maroons and blues between 1937-9, colors that were very popular on pleasure cars before the war and so well received that Du Pont chemists



Mr. Hucks points out panels showing over 200 grays, greens and browns in which Metalli-Chromes are available.



undertook experimental work to produce a wider range of translucent colors.

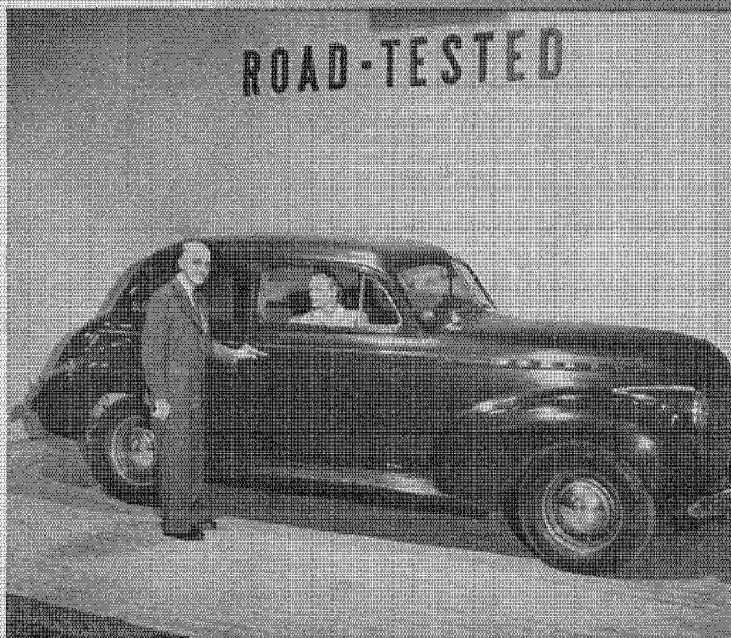
Led by Robert T. Hucks, who had developed a new process for dispersing pigments in lacquers, a team of finishes chemists began an intensive study of coloring materials for this purpose. "Duco" Metalli-Chromes are the fruits of their labors.

These new finishes are astonishingly durable. Exposed for a year in the ultra-violet laden Florida sunshine, their color fastness and film integrity are so nearly perfect that it is difficult to distinguish between exposed and unexposed test panels.

PIGMENTS

To understand the distinctive character of the new Metalli-Chromes, one needs to know something about pigments themselves—what they are, and how they are made.

Some pigments are found in nature, like the earth colors with which the American Indians once painted their faces and bodies. But nowadays commercial pigments are largely products of modern synthetic chemistry. Many of them are precipitated from chemical solutions in the form of fine, wet particles, which normally must first be dried and ground, and then be



The durability of "Duco" Metalli-Chromes is dramatically demonstrated on this Chevrolet which was finished in metalli-chrome lacquer in 1941 and has since seen 44000 miles of service with no special finish care other than an occasional washing.

reground with a liquid vehicle to produce the final paint or finish. Every effort is made to grind the pigment as fine as possible because fineness of particle size, more than anything else, gives a finish its lustre.

And this brings us to the first of two developments responsible for the new Metalli-Chromes.

Although pigment particles mechanically ground are extremely fine, it has long been known that they are far *smaller still* when originally precipitated from the solutions in which, so to speak, they are born.

A few years ago, chemists went to work to find out if it were possible to capture and use these pigment

in their original finely-divided state when they are kept separated from each other by a coating of water.

Today this is being done without the usual preliminary drying and grinding. Methods have been developed for removing infinitesimally small pigment particles, still wet, from their mother solutions and for transferring them directly into a lacquer. The process is far too complicated to be described here, but it may be said that Du Pont's method makes use of a kind of "chemical sponge."

The second development was the practical utilization of ferric hydroxide as a pigment. Although this chemical compound has long been used as an intermediate in the manufacture of iron oxide pigments, its use as a pigment had been extremely limited and its true value unrecognized.

When ferric hydroxide is dried it becomes iron oxide, commonly yellow or red in color. To use the hydroxide as a pigment necessitated finding some way of removing it from the water in which it is precipitated and transferring it to a lacquer vehicle without drying it. The new process provided a means of doing this, but an entirely unexpected result was obtained; for the lacquer embodying microscopically fine particles of hydroxide possessed not only unusual brilliance but it was found to possess unusual durability as well. In combination with other pigments, a whole gamut of new color effects became possible.

Hence Metalli-Chromes are basically the result of two discoveries: (1) the method of transferring water-wet pigments to a lacquer vehicle without intermediate drying of the pigment, and (2) the unusual color effects and durability obtained with finely-divided ferric hydroxide as a pigment.

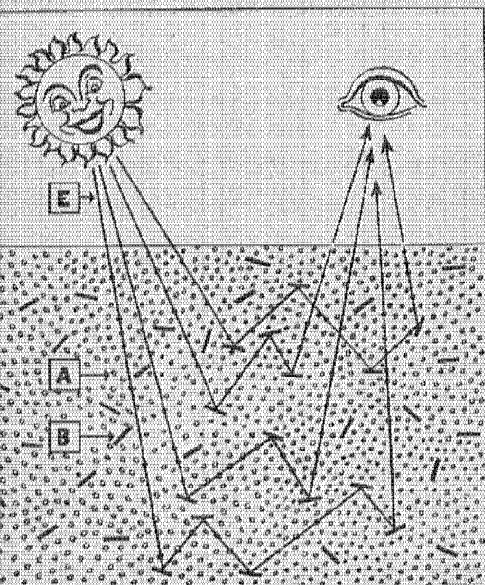
TRANSLUCENCY

Because of the extremely small particle-size of the pigments employed (on the average it would take about 500,000 particles of the ferric hydroxide pigment laid side by side, to measure a single inch), Metalli-Chromes are somewhat translucent and have a distinctive soft, inner glow.

The lustrous depth that characterizes these lacquers is further enhanced by the presence in the film of aluminum particles that act as millions of minute mirrors to bounce the light around inside the finish—and thus diffuse it—before reflecting it back to the eye. While there is nothing new about employing aluminum particles in this manner in metallic coatings, their effectiveness as mirrors was previously extremely limited because opaque pigmented film prevented all but the particles near the top surface from serving this purpose.

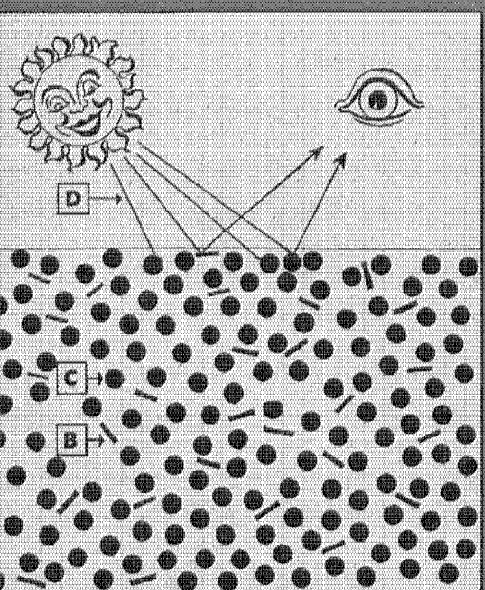
"Duco" automotive lacquers have long enjoyed high repute for their appearance and their durability in service. Now "Duco" Metalli-Chromes offer motorists even more durable car finishes in new glowing, deep-toned, translucent colors of indescribable beauty. You will be seeing them soon.

These new Metalli-Chrome colors are now available for factory finishing and shop refinishing work.



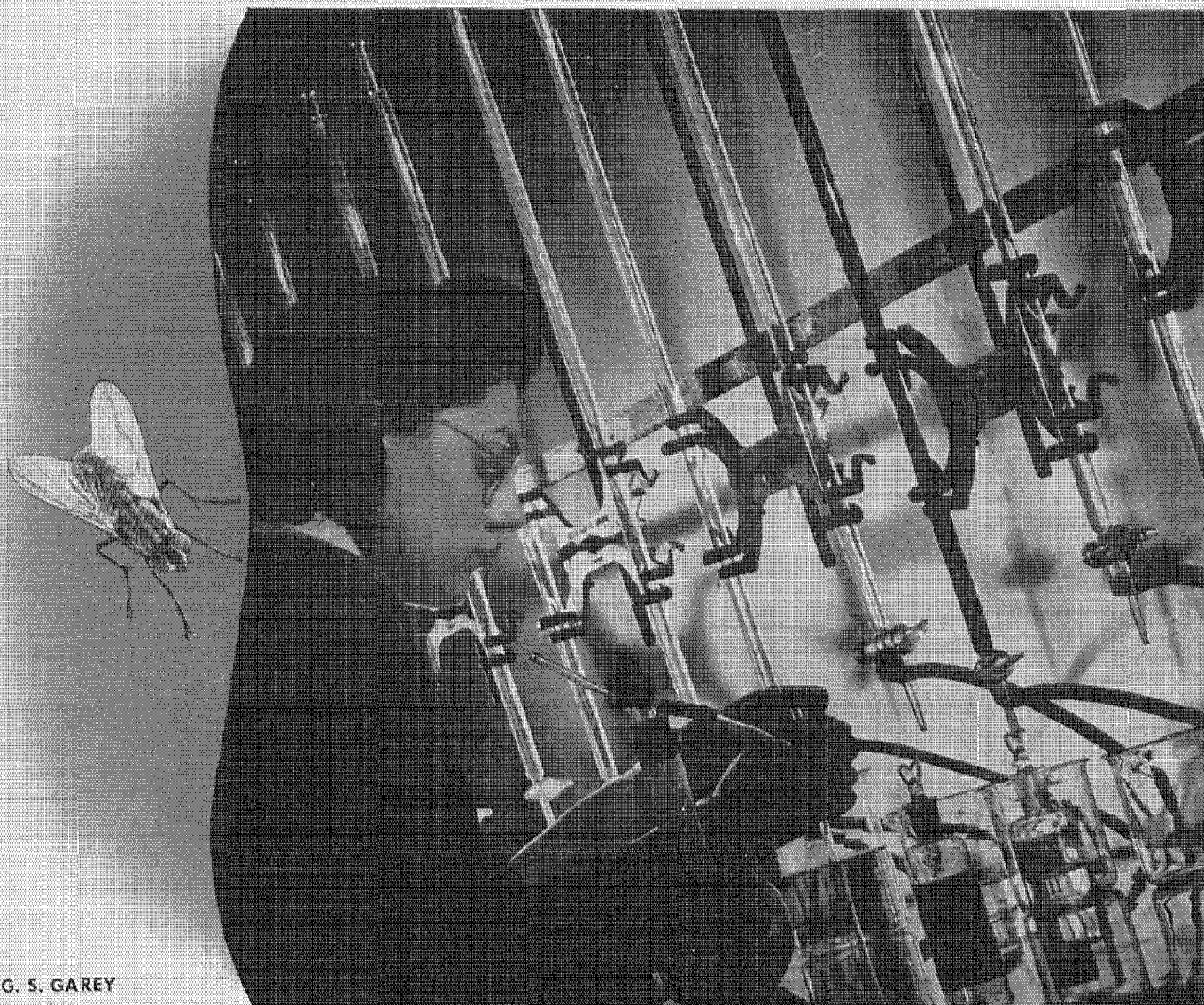
Diagrammatic cross-section of "Duco" Metalli-Chrome film (magnified). Light rays (E) penetrate deep into fine pigment particles (A) and are reflected back to eye by aluminum particles (B).

The rich, glowing appearance of Metalli-Chromes results from the high degree of translucency due to the extreme fineness of the pigment particles employed. Glowing effect is enhanced by particles of aluminum which act as tiny mirrors diffusing and reflecting light within the film.



Diagrammatic cross-section of conventional metallic lacquer film (magnified). Light rays (D) are unable to penetrate film due to coarseness of pigment particles (C), strike only the aluminum particles (B) on surface.

FREEDOM FROM INSECTS ... WITH "FREON"



By G. S. GAREY

"FREON" REFRIGERANTS, the same safe chemical compounds that cool the food in most home refrigerators, have returned to peacetime tasks with a surprising promise for the future. "Freon" as a propellant for insecticides now promises to aid, as never before, in bringing freedom from insect pests.

Contributing new things for better living is by no means an unusual role for these versatile compounds; they have already helped to give us a whole new set of eating and living habits.

They have played an important part in the development of more efficient home refrigerators that

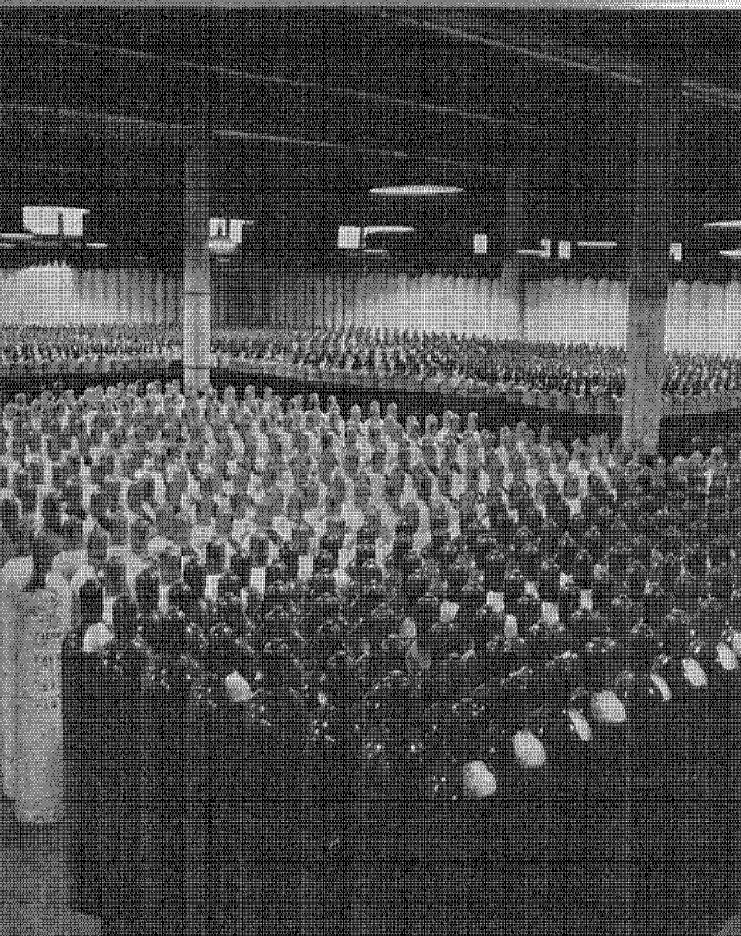
include quick-freezing compartments as well as large storage space. They provide comfort daily for millions of theatre patrons and department-store customers, and for those who work in air conditioned buildings and the more modern manufacturing plants. In scores of industries these refrigerants do hundreds of jobs such as shrink-fitting metal parts where temperatures as low as -150°F . may be required. They are used in modern locker plants to freeze, preserve and

"Freon" refrigerants and propellants are manufactured by Kinetic Chemicals Inc., which is jointly owned by Du Pont and General Motors Inc. "Freon" is Kinetic's registered trade-mark for its fluorine refrigerants and propellants.



Checking a cylinder of "Freon" for leakage with a halide lamp prior to shipment from the plant.

Army and Navy had first call on "Freon" during the war. Now available for commercial use.



store food for millions of people. And now, as propellants for insecticides, these remarkable compounds offer new possibilities of combating and controlling insect pests.

This new weapon in the fight for pest control is known as an insecticidal aerosol, the scientific name for a fog or smoke formed by fine particles of insecticide. The charge of "Freon" and the insecticide is packaged in liquid form in convenient, one-pound dispensers about twice the size of an ordinary drinking glass. Here's how it works:

When the finger control valve of the dispensing device is opened, the "Freon," discharged into the air under its own pressure, changes instantly from the liquid to the vapor state, expanding two hundred and sixty times its original volume. This blows apart the particles of insecticide dissolved in the "Freon" with almost explosive violence so that very fine particles—about 1/5000 of an inch in size—saturate the air and float in it from twenty minutes to two hours. Because of the aerosol, insects are exposed to the killing action of the insecticide longer than they would be by any other suspension type of insecticide. As a result it is one of the most efficient methods yet devised for killing mosquitoes, flies, gnats, roaches, ants and other cold-blooded pests.

"Freon" refrigerants first came into use as propellants for insecticides in 1942, shortly after Pearl Harbor. At that time American armed forces had to wage two wars—one against human foes, the other against insects. They knew how to deal with the Japs, but a new type of warfare had to be developed to fight off disease-bearing insects, the malaria-carrying mosquitoes in particular.

Head nets, mosquito bars, special gloves and insect repellents were rushed to the new front. Films were shown; manuals and booklets were distributed; classes were held to instruct men in the recognition and habits of the winged enemy. The war within a war was on!

But our troops were on the defensive. To win a war, it is necessary to attack—so our forces went over to the offensive, using Du Pont Ditching Dynamite, in some cases, to drain the mosquito-infested breeding grounds. Still ponds that could not be drained were sprayed with oil which coated the water with a light film and suffocated the pestilent larvae. Oil rags were dipped into puddles. Holes and depressions in the earth were filled.

But the percentage of malarial casualties still ran high. The insidious mosquito deposited eggs in hidden jungle pools, in rainwater trapped in blasted tree stumps, in dirty liquid cupped in rocky crevices—and the deadly attacks against our men continued. A new offensive weapon was needed.

Research men set to work on that problem. By good fortune Dr. Lyle D. Goodhue, then of the U. S. Bureau of Entomology, had begun experimenting with aerosols shortly before the war. He and his associates were convinced that the best way to kill insects was through the use of insecticidal aerosols. However, the known methods for producing them were imprac-

ticable for ordinary use because of equipment limitations. A new propellant had to be found—one that would be both safe and practical to use.

Dr. Goodhue discovered that "Freon" refrigerants would meet the requirements for field use. These are gases which become liquid under pressure. Goodhue found that, under proper conditions, insecticides such as pyrethrum extract could be dissolved in "Freon," just as sugar is dissolved in coffee. And when the solution was enclosed in a dispenser, the "Freon" acted as a propellant. It has since been found that small amounts of DDT can be added to the pyrethrum extract and will increase the kill.

This was the scientists' answer to the disease-bearing insect problem, and it was an effective one. The insecticidal aerosol—or "Freon" aerosol bomb—as it came to be known by our fighting men—proved to be amazingly efficient. Before long, the bomb-shaped container became a familiar sight to men in all branches of the service. It was used aboard ships of the U. S. Navy, in airplanes, hospitals, hutments, tents and foxholes—in fact, wherever disease-bearing insects threatened the health of our men.

Today, this war-born weapon is ready for peacetime applications in the service of all who are plagued by insect pests. It is now used by Pan American Airways for airplane fumigation to prevent the spread of disease-carrying insects, and by countless housewives to free their homes from pests.

Aerosols promise to be of great service to both farmer and industry. Through proper aerosol spraying, farm outbuildings and barns can be kept insect free the year around, and the same holds true for industrial plants. One large-scale experiment in a 27-million cubic foot factory showed that all flies and mosquitoes could be cleaned out in a remarkably short time without any interruption of regular work.

Florists, too, can share these benefits. Plant-destroying bugs have little chance for survival in a greenhouse fumigated by the "Freon" aerosol method. In closed spaces the aerosol can be retained long enough to insure effective results.

The usefulness of the "Freon" aerosol is not confined solely to insecticides. Different types may be produced by dissolving other chemicals in the liquefied "Freon." For example, fungicides are easily applied in aerosol form, and germicides for the sterilization of air may be handled effectively in this manner.

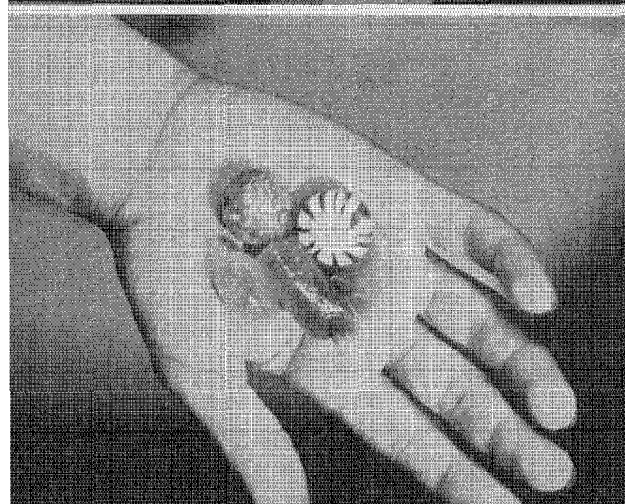
Perhaps the most unusual application is in the field of plant hormones. Here, successful experiments have been conducted in which seedless tomatoes were induced to form. Only a minute quantity of the hormone aerosol was required to make the fruit develop without pollination.

Many other possible applications are seen for the "Freon" aerosol. Some will be developed; others may not go beyond the experimental stage. But, whatever happens, it has already been proved that insecticide aerosols are among the most effective methods ever devised for killing insect pests. This use of "Freon" alone holds interesting possibilities for the future.



These insecticide dispensers, known as aerosol "bombs" contain an 80 to 90 per cent "Freon" propellant charge. This is the same, safe chemical used in your kitchen refrigerator.





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 •
 • *Cellophane packaging performs* •
 • *a vitally important service in* •
 • *helping control the spread* •
 • *of infection.* •
 • • • • •

FOR THE past fifty years or more there has been a continuous drive to improve public health. During the war, this campaign was overshadowed by others such as bond and salvage drives. But now sanitary crusaders are again on the march.

"Be Wise—Sanitize!" is the battle cry. But how? you ask. One sure way is to learn what are the local health rules and regulations in your community. At least, we should know the provisions about foods.

• • • BARRIER

Item 15 of the U. S. Public Health Service ordinance and code directs: "All food and drink shall be so stored, displayed, and served as to be protected from dust, flies, vermin, depredation and pollution by rodents, unnecessary handling, and other contamination" . . . The reason is quite obvious. Foods not properly protected—and a lot of other things too—may become a public health hazard.

Schools, colleges, women's clubs, civic groups—all are active in promoting better sanitation conditions; their influence is largely responsible for the federal government's increasing activity in public health work. Through the U. S. Public Health Service, the Children's Bureau of the Department of Labor and other agencies, comes much valuable information on the prevention of illness and the promotion of health.

Many municipal codes prohibit open displays of prepared foodstuffs at sidewalk markets. Foodstuffs in stores must be on counters at least eighteen inches from the floor. Employees who handle food are required to undergo regular medical examinations. Dish-water used in restaurants must be maintained at or above a certain prescribed temperature.

● *Many old fashioned general stores were health hazards to the community. Open displays and unnecessary handling of food invited dirt and germs.*

Our interest, as individuals, is naturally directed toward the problems that confront us personally. Why do many people wipe off the table silver when dining in restaurants? Because they are conscious of the hazards to health and make this gesture as a safeguard, it is considered one of doubtful value. Although the cause of infantile paralysis is not known, mothers take every precaution to protect their children and the food they eat from flies and other possible carriers.

Packaging is one of the most practical and satisfactory ways of improving the standards of sanitation. And among the better packaging materials used, Cellophane is doubly helpful; for it provides a shield against dirt and germs, and also allows the products it protects to be seen through wrappings suggestive of cleanliness and health. These are some of the reasons why this film is used to safeguard bread, candy, meat products and scores of other food items. Other products of a personal nature are similarly packaged, such as cigars, shaving brushes, powder puffs and underwear for adults; garments, bottles, and toys for infants; and picnic supplies for everybody.

Some hotel managers provide their patrons with drinking glasses sealed safely in Cellophane and la-

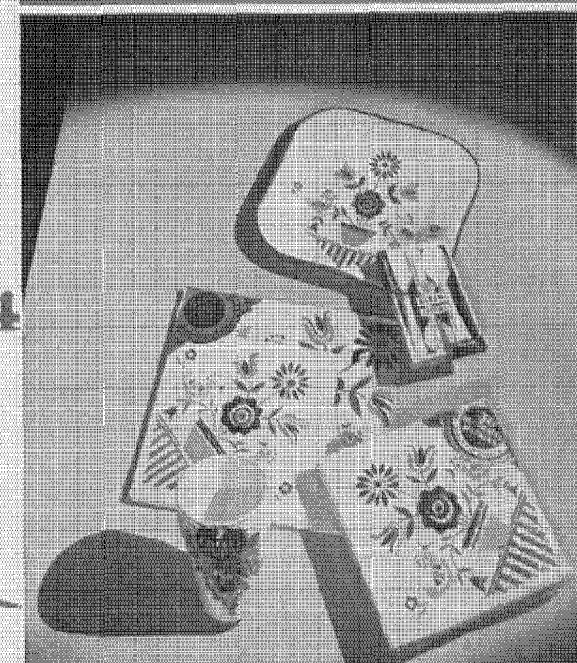
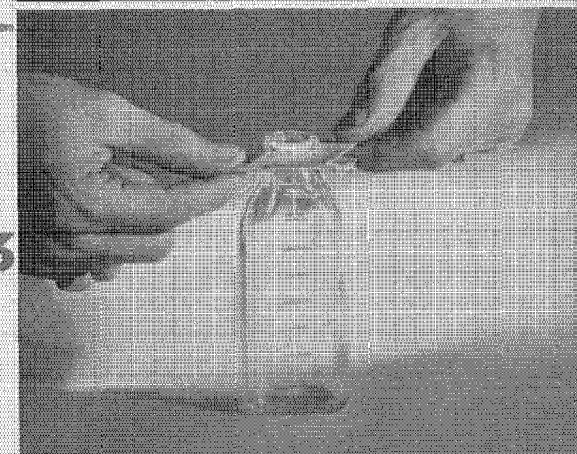
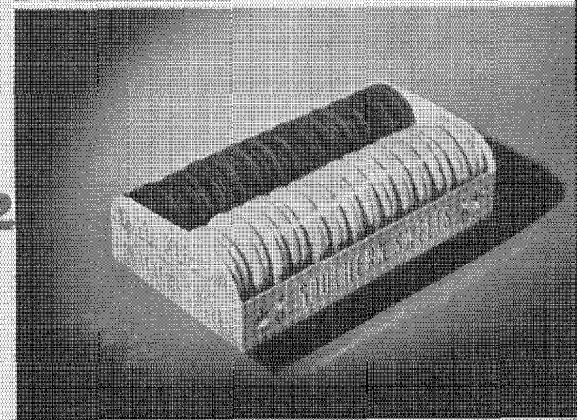
AGAINST GERMS

beled "for your protection." Further proof of the ability of this film to protect against germs lies in the fact that doctors and surgeons sometimes use it as a germproof shield, adding a layer to the dressing over a wound.

During the war years, large quantities of Cellophane were diverted to meet the requirements of the armed forces for packaging sulfa and other drugs, surgical equipment, and food rations. Here the more functional properties of the film, such as moisture-vaporproofness worked hand in hand with sanitary protection in preventing spoilage and contamination over long periods of exposure.

Cleanliness and Cellophane are synonymous terms in people's minds. Because this transparent wrapping material protects the contents of packages, keeping items clean and free of contamination, it performs a vital health service.

- 1 *Modern retail stores display wide varieties of products packaged for customer convenience.*
- 2 *Transparent packaging safeguards quality and assures cleanliness, yet shows the product well.*
- 3 *Modern child care calls for strict observance of sanitation principles—one use for cellophane.*
- 4 *Disposable items, like this picnic kit are an aid to sanitation, look better, if properly packaged.*



KEEPING THE LOGS ROLLING

● "TIMBER IS A CROP—THE HARVEST IS HOMES"



By ARTHUR M. VALZ

TIMBER and explosives have become an unbeatable team in the lumber industry. Hilly and rock-bound elevations, rushing mountain streams and dense forests confront the Bunyanesque men in their trek through mud, rain, cold, snow, dirt and heat to the cutting stands of Douglas fir, Sitka spruce, hemlock and cedar.

Punching feeder roads and spur tracks, blasting boulders weighing several tons and dynamiting paths into the labyrinth of undergrowth are all part of the job which the loggers call the "show." The operations require tremendous investment in equipment and expert knowledge of forest engineers. The overall team objective is to convert forests to logs, logs to lumber, and lumber to homes.

The coach is the forest engineer. He is thoroughly familiar with the terrain, transportation routes, and the equipment to be utilized. He chooses the landings to which the logs are hauled for loading to vehicles, marks the cutting lines of the stands, and indicates which trees shall remain for reseedling.

The operational equipment includes everything from the woodman's axe to the engineer's bulldozer. Construction entails laying spur tracks—off-shoots from railroads, truck highways and landings and skid-

ways. The necessary tools and supplies include donkey engines, trucks, rigging outfits, cables, explosives and enough materials to erect a bunkhouse, cook shack, tool shed, recreation house and perhaps a dispensary.

The front line players are the lumberjacks, each with special duties to perform. In woodman's parlance they call themselves: fallers, high climbers, riggers, buckers and choker-setters. These men are experts, born to the woods, many of them sons of emigrants who crossed the Atlantic from Sweden, Norway and Denmark. They are men who keep alive the legendary feats of the giant Paul Bunyan, fabulous woodchopper of pioneer days, and of Babe, his great blue ox. They live in a rough environment and a blast of dynamite is as common as an auto horn to a city dweller.

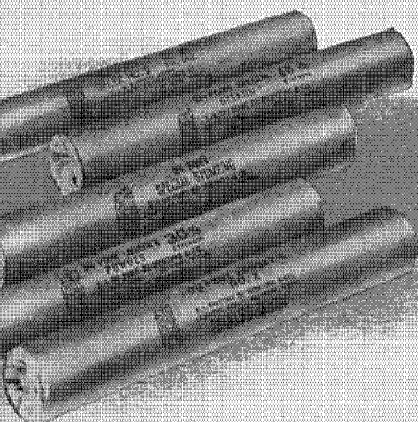
Their domain is picturesque country where snow-capped mountains top the skyline and timber towers 100 to 200 feet. This region, west of the Cascades from Canada to the California line, contains 29 million acres of forest land.

Explosives have been essential in the development of Northwest timber for almost 75 years. The Du Pont Company has long been familiar with the particular problems of the logging industry; in fact, since 1909 it

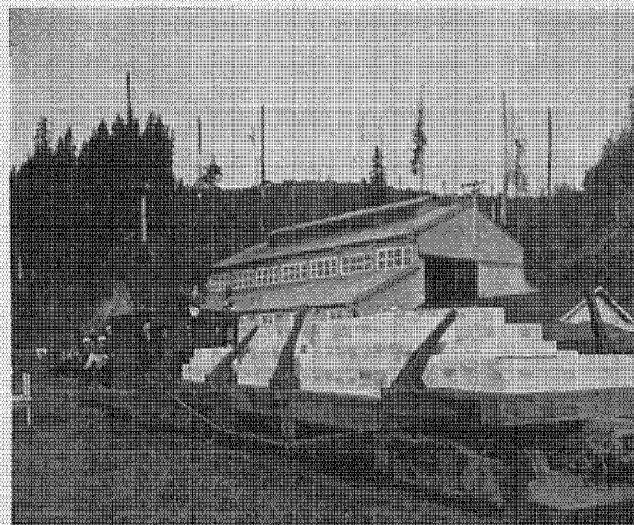
● *Fir and spruce are cut into 20-foot logs. Trucks, diesel-powered locomotives keep 'em rolling to mills.*

● *Spur tracks (far right) are the links with the cutting stands. Du Pont explosives make roadbed construction an easier, faster job, help get the logs out.*





In the Pacific Northwest, explosives ride to staging areas on flat cars.



has maintained a dynamite plant at Du Pont, Washington, a small town south of Tacoma.

Thanks to research, great strides forward have been made in improving equipment and operating methods. Du Pont's contribution has been the production of better dynamites for the timberman's use. For many years logging companies have employed mechanical aids and explosives in their work. As a result numerous isolated stands, formerly classed as non-commercial, are now being developed.

The construction of logging roads often requires the use of dynamites to blast heavy rock cuts, stumps and boulders along the right of way. Large stumps, such as the tough and heavy-rooted butts of Douglas fir and Sitka spruce are frequently blasted with Du Pont Loggers' and Loggers' No. 2 powders. Special Stumping Powder is sometimes used on small stumps.

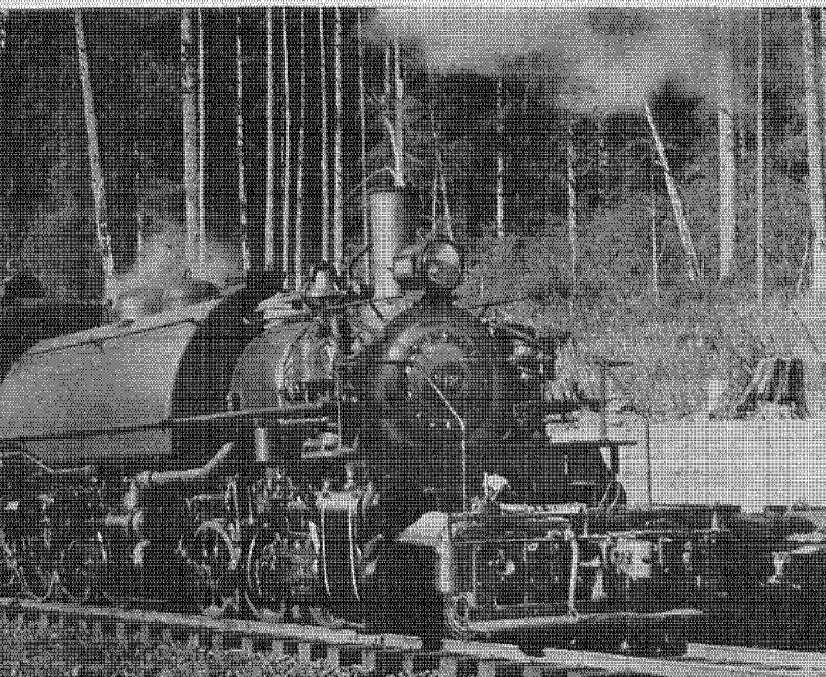
When roads need surfacing with stone, rock is obtained from a quarry in the area. Blasting practices are varied according to the type of quarrying necessary. Du Pont supplies two explosives—"Special Gelatin," a dense plastic, and extremely water-resistant dynamite that will shatter the toughest rock, and "Gelex" No. 2, a semi-gelatinous dynamite possessing good water re-

sistance. If the work is dry, Du Pont "Red Cross" Free-Running Powder is frequently used. Du Pont Ditching Dynamite is also commonly employed in constructing drainage ditches for roads.

Choker hole shooting—blasting holes beneath logs in order to fasten a wire cable around them to facilitate hauling—requires dynamites. Sometimes after a tree has been felled and the buckers have sawed it into logs, a hole is made in the ground under the log near one end. The explosive is loaded and tamped; that is, packed with earth. The blast opens a hole large enough to accommodate the cable which the choker-setter puts in place. Cartridges of either Du Pont Loggers' or Special Stumping Powders are most effective in this type of blasting.

Today America needs all the lumber that can be harvested—needs it badly for new housing and the many requirements of peacetime reconversion. Europe needs lumber too, to rebuild destroyed cities and to provide living quarters for homeless millions.

The explosives mentioned are only a few of many types manufactured by the Du Pont Company. As a result, whatever the work involved in keeping the logs rolling, there are explosives "tailored" to fit the job.



THE GOLDEN EGG



*The Du Pont Company receives trophy
and citations from
New Jersey poultrymen*

IF WE had not had synthetic vitamin D, it is doubtful that we could have produced one-half of the great supplies of eggs and poultry meat which helped feed our people during the war."

This statement is part of the citation accompanying the award of the symbolic "Golden Egg" to the Du Pont Company "for distinguished service to the poultry industry" by the New Jersey State Poultry Association. The award was made at the association's annual "Farmer's Week" dinner last February at Trenton, New Jersey.

Dr. Walter C. Russell, professor of agricultural biochemistry of Rutgers University, who presented the award to Dr. James Waddell, of the Du Pont Biological Laboratory, New Brunswick, New Jersey, had this to say:

"Dr. Waddell of the Du Pont laboratories, demonstrated that the exposure of crude cholesterol, an animal sterol, to ultraviolet radiation, produced a vitamin D which is as effective for poultry as that obtained from the livers of fish. The discovery of how to produce this substance, now known as 'Delsterol' D-activated animal sterol, made available to the poultry industry a new source of this important vitamin.

"The Du Pont discovery was made in 1931, although several years were required to develop production methods, and the product reached the market in 1938. A few years later, World War II was upon us, and almost immediately shipments of fish liver oils from abroad ceased. It soon became necessary to withdraw our fishing fleets. However, Vitamin D, prepared artificially, provided an inexhaustible source of

this nutritional factor. With this supply available, the poultry industry of America was able to set a record of production which has never been achieved in the best years of peace."

W. H. Allen, New Jersey Secretary of Agriculture, referring to this chemical contribution, said: "The award recognizes the contribution made as a result of the practical application of science by a great research organization, an application which saved the day for our poultrymen when war cut off the nutritional mainstay of their industry."



Dr. James Waddell (right) of the Du Pont Biological Laboratory, New Brunswick, N.J., accepts the "golden egg" in behalf of the Company from Dr. Walter C. Russell—agricultural biochemist of Rutgers University.

"Cavalcade"

ENTERS 11TH BROADCAST YEAR★

Du Pont Radio Program returns to the air August 26th. ★

Past season earns three awards. ★

THE DU PONT COMPANY'S "Cavalcade of America" returns to the air this month after a brief summer lapse, to continue the series of dramatic shows which started in the Fall of 1935. The program will again be heard over the National Broadcasting Company network, featuring the top actors and actresses of stage and screen.

Since 1935 there has been no change in the basic program policy of linking together little known, but thrilling episodes of American life—which go to emphasize the fundamentals of American character, and which have made America great.

During the past broadcast season, which ended in June, "Cavalcade" was the recipient of three new awards, making a total of 29 awards, citations, and mentions that the program has received during ten years of broadcast. In two newspaper polls, the Annual Radio Editors' Poll, and the Milwaukee "Journal" Poll, Cavalcade was awarded third and fourth, respectively, for dramatic excellence. In nationwide balloting conducted by the Women's National Radio Committee, representing seven million women who are members of the Committee's 25 affiliated organizations, "Cavalcade" was judged the one program presented over the NBC network which "tends to awaken social consciousness, and aids the general public in coping more intelligently with complex national and international problems." The award was made in New York City last May.

In 1945, Cavalcade was singled out for the Peabody Award—the equivalent in radio to the Academy Award "Oscar" of the film industry for "outstanding entertainment in drama" and for "bringing the best of actors always appropriately chosen to dramatize personalities and events which have made America strong."

"This is the best kind of drama for radio—vital and real for any medium," the citation concluded.



Helen Hayes, a many-time "Cavalcade" star, does some script work with Jack Zoller, director of the show. ★

Mme. Yolanda Mero-Irion, chairman of the Women's National Radio Committee presenting the committee's award to William H. Hamilton, "Cavalcade" Radio Manager, who accepted in behalf of the Du Pont Company. ★



What's New

THE Jacob F. Schoellkopf Medal for outstanding service to chemistry in 1945 has been awarded to Dr. Harvey N. Gilbert, supervisor of sodium and cyanide products research at the Niagara Falls plant of the Du Pont Company's Electrochemicals Department. Dr. Gilbert was cited by the Western New York Section of the American Chemical Society for his research on the production, handling and utilization of metallic sodium.

CLEANING the inside of water mains and oil-pipe lines is now done speedily and economically by means of a Rotary Pipe Crawler, or "Go-Devil" which consists of a hollow or solid neoprene ball enclosed in a mesh-like harness of heavy chain. The crawler is inserted in the line, and with water or oil pressure forcing it through the line with a revolving motion, the chain removes scaly deposits from water pipes and paraffin

from oil pipes. The operation is repeated as many times as is necessary to clean the pipes. Neoprene was selected because it is compressible, tough enough to withstand severe mechanical abrasion, and is resistant to oils.

EXCELLENT forward vision for the pilots of the new Ryan FR (Fireball) jet-propelled fighter planes is provided by a transparent cockpit canopy of "Lucite" acrylic resin, installed slightly forward of the leading edge of the plane's wing. The clear, lightweight plastic enclosure also permits good visibility directly down over the wing. These canopies are fabricated by the Stack Plastics Company, Culver City, California, for the Ryan Aeronautical Company, San Diego, California. The Fireball is the Navy's first jet-propelled fighter plane.

A NEW \$1,000,000 Electrochemicals production unit of the Du Pont Company is under construction at Toledo, Ohio, to provide Mid-West users of formaldehyde with a closer source of supply. Formaldehyde is the key chemical in the synthetic resin industry, manufacture of paper, leather, fur, dyes, textile chemicals, embalming fluids and many other products.

DDT YESTERDAY AND TODAY

(continued from page 5)

lumbermen wondered if they could treat living trees in the forest, and stacked logs and boards in the yards. A spray might be best for one, but would a spray or a dip be better for the other? Dairying is an industry; baking is an industry; the milling of flour is an industry. And such categories as mills, factories, stores, restaurants, hotels and scores of others, if they used the new insecticide compound, would use it under highly specialized conditions. Again—what were the best formulations? Further research was necessary, and further testing.

The Du Pont Company now offers, for industrial uses, five DDT formulations under the trademark "Deenol." All told, they promise industry, commerce and public health agencies continuous control of more than two hundred insect pests. Like the "Deenol" compounds, they are offered in various strengths. Available are a water-dispersible powder, an emulsifiable oil, a dusting powder, a ready-to-spray oil solution and a concentrated oil solution designed for large-scale industrial users who make their own dilutions.

And so DDT, the exciting "new discovery," has settled down to work. Many novelty-seekers last summer would have been better pleased, no doubt, if they had been able to buy all the DDT they wanted—in any concentration and any form, just so it had the miraculous letters on the label!

But DDT is no miracle. It will not kill every insect in the entomologist's book. It is just an extraordinarily

good insecticide, most effective when the right formulation is used in the right way. Those "right" formulations had to be painstakingly worked out.

It took time, yes. But now we are well along the path to accurate knowledge as to when and where to use DDT, and how. The dazzling debutante has gone soberly to work.

CHEMICAL DIRECTOR HONORED

IT IS OUR PLEASURE to note in these pages the recent election of Dr. Elmer K. Bolton, the Company's chemical director, to the National Academy of Sciences. Inclusion in the distinguished roster of the Academy, we are told, is the highest honor that can be achieved by an American scientist. Dr. Bolton's 36-year record with the Company, however, has been one of continual achievement, commencing with his research on synthetic dyes in 1916, through the development of neoprene, the first general-purpose synthetic rubber, and direction of the research which resulted in nylon. Only last year he received the Perkin Medal for his outstanding accomplishments in industrial research, and in 1941 the Chemical Industry Medal for "valuable application of chemical research to industry." Truly a praiseworthy record—one to which we're happy to add our own bit of praise.

THE EDITORS



GARDENIA UNLIMITED!

depend on du pont

ISO AMYL BENZYL ETHER

Need a suggestion for soap perfumes? Here's a good one . . . Iso Amyl Benzyl Ether for that rich gardenia fragrance. A colorless, high-boiling liquid, you'll find it useful as a blender—or to bring a perfume to its full bouquet. You can use it too in flavors . . . it has a pleasant fruitiness.

Discover Iso Amyl Benzyl Ether. Whatever the product, whatever the fragrance, see Du Pont early. You can always depend on Du Pont . . . E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Aromatics Section, Wilmington 98, Del. Branch Offices: Boston, Charlotte, Chicago, New York, Philadelphia, Providence, San Francisco.

du pont aromatics

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY



REG. U.S. PAT. OFF.

SPLASH!



...but no SMASH

(for this dish is Du Pont nylon)



Keeps you in touch . . .

The Du Pont Plastics Bulletin, published several times a year, tells you of the new developments in Du Pont plastics . . . of the new uses, almost as fast as they "happen." A request on your business letterhead will bring the Bulletin to you with our compliments.

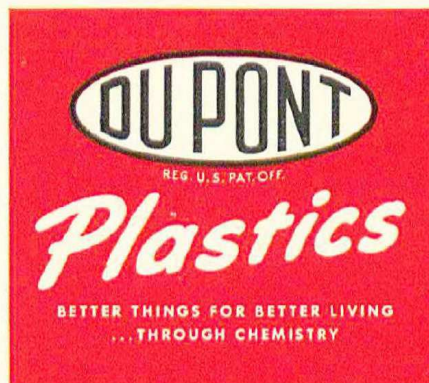
TOO BAD — but down it goes! At least, the dish won't break . . . it's made of Du Pont nylon. What's more, it stands heat—it can be sterilized. It is colorful, light, easy to clean.

Thus a breakage problem that's as old as having babies is solved by a new Du Pont plastic—and by one man's knowledge of its properties.

The baby dish is but one recent example of a new use for nylon . . . and nylon is but one of the growing family of Du Pont plastics. What new product have you in mind? You'll perhaps be several steps nearer to production if you have information on all the Du Pont

plastics. Write for literature. E. I. du Pont de Nemours & Co. (Inc.), Plastics Dept., Room 925, Arlington, N. J.

Baby dish shown is molded of Du Pont nylon and sold by Columbia Protokosit Co., Inc., Carlstadt, N. J.



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