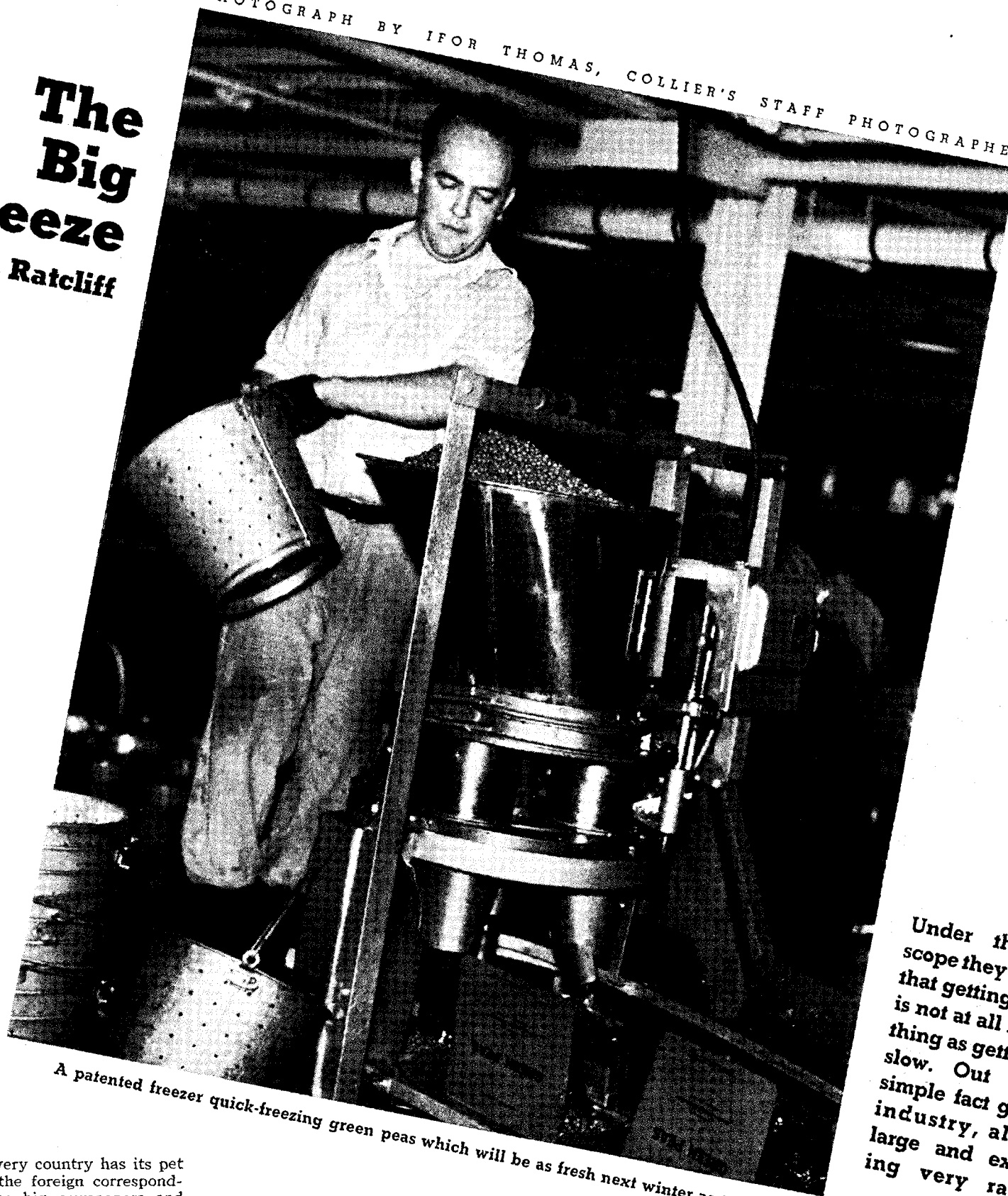


The Big Freeze

By J. D. Ratcliff

PHOTOGRAPH BY IFOR THOMAS, COLLIER'S STAFF PHOTOGRAPHER



A patented freezer quick-freezing green peas which will be as fresh next winter as today

Under the microscope they found out that getting cold fast is not at all the same thing as getting cold slow. Out of that simple fact grew an industry, already large and expanding very rapidly

NEARLY every country has its pet story for the foreign correspondents of the big newspapers and press associations. Rio specializes in jungle reports of a white god who answers the description of the long-missing American flyer, Paul Redfern. Warsaw's hardy perennial concerns the backwoods couple who kill a stranger for his money, then discover he is their long-lost son.

Riga reports an uprising in the Red Army whenever business is slow on the cables, and Moscow has its mammoth story. This one usually runs to a pattern. A Siberian trapper has lost all of his food to wolves. After he has stumbled along for days, on the verge of starvation, he spies a clump of fur sticking out of the ice. He chops the ice away and finds that the fur belongs to a mammoth—one of the hairy elephants that became extinct some 20,000 years ago.

So perfectly has the beast been preserved by the cold that the trapper cuts himself off a steak, eats it and plows happily back to civilization.

Preposterous though it sounds, the mammoth story just happens to be true. Pictures are available of a mammoth exhumed in a nearly perfect state of preservation as recently as 1935. So far as scientists know, meat, if frozen properly, can easily survive for twenty millenniums. Furthermore, there is evidence that more plebeian things than mammoth steaks—strawberries, lobsters and asparagus, for example—become practically immortal if chilled properly and kept at a sufficiently low temperature.

This new knowledge hasn't been used merely to amuse a group of fact-seeking research men. On it rests a brand-new industry: the quick-frozen foods industry. To prevent confusion cast frozen foods out of your mind. The new industry has nothing to do with the frozen fish and chickens that most housewives complain so bitterly about.

The new industry was born during the depression and today is in about the

same position that the canning industry was in fifty years ago. Each year since its inception it has grown at least fifty per cent over the previous year. If it continues to grow—there is every indication that it will—count on it for a heavy proportion of the victuals you will eat in your old age.

It is making all manner of goofy things possible: oyster stew in August, and corn on the cob for Christmas dinner; asparagus in October and strawberry shortcake for Thanksgiving. The industry's ability to laugh at the calendar rests on the fact that its foods may be months old. But its oysters taste just as fresh as if they had just been scooped out of Chesapeake Bay, and its corn just as tender and sugary as ears pulled a few hours before.

Against nature, you might think. And

you certainly cite illustrious examples to establish your point. Freezing, you may properly contend, turns potatoes black and peas brown. It makes them leathery and inedible.

But quick freezing doesn't.

There is a world of difference between the two methods. You can get a graphic picture of it by looking inside a bean. We'll take a sliver and place it under a microscope. The cellular structure looks like a honeycomb, each cell being filled with viscous liquid. If we put our microscope and our bean sliver in a cold atmosphere—say 25 degrees F.—you can see what happens when freezing is slow.

Long, jagged, irregular ice crystals start forming within the cell. They grow

and finally form a solid conglomerate with needles shooting off like the quills on a porcupine. Finally the mass becomes so large that it punctures cell walls. This is all very well, so long as the sliver of bean remains frozen.

But, once thawed, extensive change takes place. The liquid in the cells—mineral salts and other products that give the bean its taste—leak away. There's nothing left but a flabby, unattractive mass of vegetable matter. It is tasteless, worthless.

Thirty years ago a scientist named Planck observed this happening and wondered if there weren't some way of preventing it. He wasn't so much interested in preserving vegetables as he was in finding new laws of crystal formation. Planck was a pure scientist bent on discovering basic new principles. He found that in freezing any fluid there was a zone of maximum crystallization. Simplified, this simply means that in a certain temperature zone the biggest crystals are formed. He found this zone to lie between 25 and 31 degrees F.

It occurred to other investigators that if you could whip vegetables through this zone rapidly enough you would get a different set of crystals within the cells. They tried all sorts of methods. They immersed vegetables in liquid air, sprayed them with brines at 50 degrees below zero, and froze them between plates packed in dry ice.

A Fascinating Tale of Organization

To see what happens when this is done, let's slip another sliver of bean under the microscope, then quick-freeze it by one of these methods. This time, instead of the large porcupine mass, billions of tiny, needlelike crystals form. They are usually about a hundredth the size of the slow-frozen crystals. But the important point is this: they pack themselves tightly together like toothpicks and do not break the cell walls. On this phenomenon is built the new industry that each year increases its sales over the year before by several millions of dollars.

You'll find these foods in the retail markets of a relatively small section of the country. However, they reach institutional outlets in forty-five states. You've certainly eaten the quick-frozen peas on railroad diners and the flounder fillets in hotels. The retail outlets have lagged behind for the quite simple reason that packers, in their wildest flights of fancy, have been unable to foresee with what enthusiasm the public would receive their products.

So each year markets have consumed the 50 per cent increase in production and packers haven't had the chance to extend retail outlets as they hoped to. Furthermore, toward the end of the quick-frozen season—they are generally calculated to compete with out-of-season vegetables—sales pressure has been stopped. Otherwise supplies wouldn't last.

The means by which these things reach the market is a fascinating tale of organization that would make the owner of a highly mechanized circus feel like a hopeless blunderer. Here again the story starts in the laboratory. Let's take a look at the largest packer in the field.

Before he starts freezing any foods he first decides what varieties best lend themselves to the process. When the company started on peas, for example, it found the high-starch peas which made admirable canning varieties didn't work out well in the freezing process. The high-sugar garden varieties did. This, however, was discovered only after 105 varieties had been given the most exhaustive tests.

Once varieties are decided upon the packer sends out his soil chemists to find spots where they will best grow. Other

men make exhaustive studies of rainfall, sunshine and total length of growing season in any locality that appears as a likely growing spot. Once all these details are meticulously covered, the company's real-estate men enter the picture. If there happens to be a large farm or cannery in the neighborhood, they will lease it. Then they will take on contracts for crops from adjoining farms. Possibly the land leased will total 8,000 acres—quite a nice-sized vegetable garden.

Following the Sun

Crop engineers will lay the whole project out. They will decree that on one day peas shall be planted which must mature on a certain date. Possibly they will plant 300 acres. Next day they will order 500 acres of a certain type of spinach planted, the next string beans. Dates of maturity are planned in advance, leaving just as few imponderables to God and nature as possible.

All these data are handed over to

August. Then the packing equipment moves on to Halifax for lobster and scallops in September and October. Possibly some units have been deflected to Indiana to pack chickens and turkeys or to Oregon for peaches; to be used in these places to supplement stationary equipment.

At the moment the quick freezers are busy in Fort Wayne packing chickens, in Hillsboro, Oregon, freezing berries and in New Jersey packaging vegetables. You'll get a better notion of the split-second precision of the process if we look in on one of these operations.

The New Jersey plant packs vegetables from the East's largest truck farm. For sake of chronology let's suppose that the quick freezers have just arrived to supplement those already on hand. Fast work is necessary, for the vegetables are maturing rapidly and can't be packed if they are in anything short of prime condition.

The freezers are set up in a shed and checked to insure good operation. Then

hours it is stored at 70 degrees F.

After this treatment the peas go into a vat of salty water. Those that are hard and overripe sink to the bottom. The prime ones are skimmed off the top. Next—still automatically, of course—they are poured into cartons and sealed. Then they are ready for the freezer and its 50-degrees-below-zero temperature. They shoot through the zone of maximum crystallization, and only the tiniest, most impotent, crystals form.

The process sounds long and intricate. Actually less than five hours elapse from the time the mowing machine starts until the peas are packed in trucks or specially insulated refrigerator cars. It's all so finely timed and schedules are so meticulously adhered to that in the space of 300 minutes a growing pea finds itself riding an express freight.

The railroad cars are something out of the ordinary. Instead of the usual two inches of insulation, they are packed with eight inches of cold-conserving materials. They are generally kept at zero with dry ice—product of another depression baby industry. This refrigerant is gaseous carbon dioxide—collected mostly from the fermentation vats in distilleries—and compressed into a solid state.

Specially built trucks are likewise used for transport. These rumbling refrigerators also maintain zero temperatures and also use dry ice.

The big central warehouses, whither goes all this produce, present a curious spectacle. At the moment you are probably melting your collar and wilting your linen suit. Workers in a vast warehouse at Newark, New Jersey, which supplies metropolitan New York with quick-frozen foods, are shivering. They are wearing bulky sheepskin coats, woolen helmets, mittens, and heavy socks and boots. Temperatures in the storage rooms that will be furnishing you out-of-season vegetables next winter vary between zero and ten below.

Preparing for the Lean Years

How long these products can be stored without losing their garden-fresh flavor no one knows. Recently a few executives of one of the larger companies had a luncheon of meats and vegetables that were packed in an experimental plant ten years ago. If the refrigeration temperature is lowered to —30 degrees F., there is evidence that the products will last indefinitely. At commercial temperatures used today two to three years seems to be about right.

Vitamins—those inestimably important dietary factors—apparently don't diminish in the vegetables. In some tests they have been found to run even higher than in sample vegetables taken from market stalls. Since vitamins aren't spontaneously generated by the cold, the only conclusion to draw is that the low content in the market samples was due to an overlong time gap between harvest and test.

There are 30-odd companies in the field and they are packing over fifty varieties of foods. Their fruits range from peaches to young berries; their meats from link sausages to beefsteaks. In the poultry line they pack broilers and turkeys and they can supply nearly any vegetable you can name. Plans are now being laid for a bigger 1938. In all likelihood packing will start shortly after Christmas in Puerto Rico or the Virgin Islands.

Potentialities can only be estimated. There seems to be no reason why a country with a war on the way couldn't stock prime vegetables to supply food needs for a period of years. Also, there seems to be no reason why Biblical rules of economy shouldn't be followed by stocking up in fat years with food to be eaten in lean years.



"You're so adventurous, Alfred, when it comes to ice cream!"

DOROTHY MCKAY

schedule men who must plan to have the bulky freezing and packaging equipment on hand at the precise date required. Also they must see to it that refrigerator cars are there and that space is available for storage in great central warehouses.

Actual freezing begins in the Rio Grande Valley of Texas in January with crops of broccoli, spinach and peas. Once this crop is packed the circus train starts following the sun northward. Flatcar after flatcar of the bulky refrigerators start rolling.

These freezing units are about the size of a large packing case and each one is self-contained. It has its own compressors, motors and brine-circulating apparatus.

These will be snaked off the train to pack shrimps and strawberries in New Orleans in March. At Norfolk, Virginia, units pause for strawberries in April and May. In New Jersey, beans, peas and spinach will be ready in June; other vegetables in upper New York in July. Maine corn and squash will be ready in

tractor-towed reapers start through the pea fields. They clip the plants off at the ground and feed them into the "viners." The viner is a kind of threshing machine, equipped with fast-moving paddles which whack the peas out of the pod. A conveyor carries the pod and vine away to be used for cattle food.

All Within Five Hours

The peas are fed into the sorters, where they are sized. After this they are vacuum-cleaned to remove bits of vine and pod; then they go to the blanchers, where a spray of steam shoots over them.

This is a vastly important step. The steam stops all—or nearly all—enzyme action. Enzymes are the microscopic ferments that cause a host of reactions—rot being one of the commonest. You can also blame them when corn bought at a market doesn't taste like it used to on the farm. Enzymes change 17 per cent of corn's sugar to starch every 24

A TRUE STORY *BY* ZANE GREY

**HE WAS RIDING ON
DYNAMITE AND
NEVER KNEW IT UNTIL..**



**"...This Close Shave," says
Zane Grey, Famous Author,
"Should Make Motorists
Think Twice Before
Gambling on Tires"**

THERE WAS one thing that Edward Zachary of Hartford, Connecticut, looked forward to—and that was his regular week-end spin out into the wide-open spaces.

Nothing suited him better than to open the throttle and "get away from it all." Not that he was a reckless driver. On the contrary, Ed Zachary was plenty strict when it came to observing traffic rules.

But there is one motoring mishap that the best of drivers cannot forecast. And it caught Mr. Zachary completely off guard.

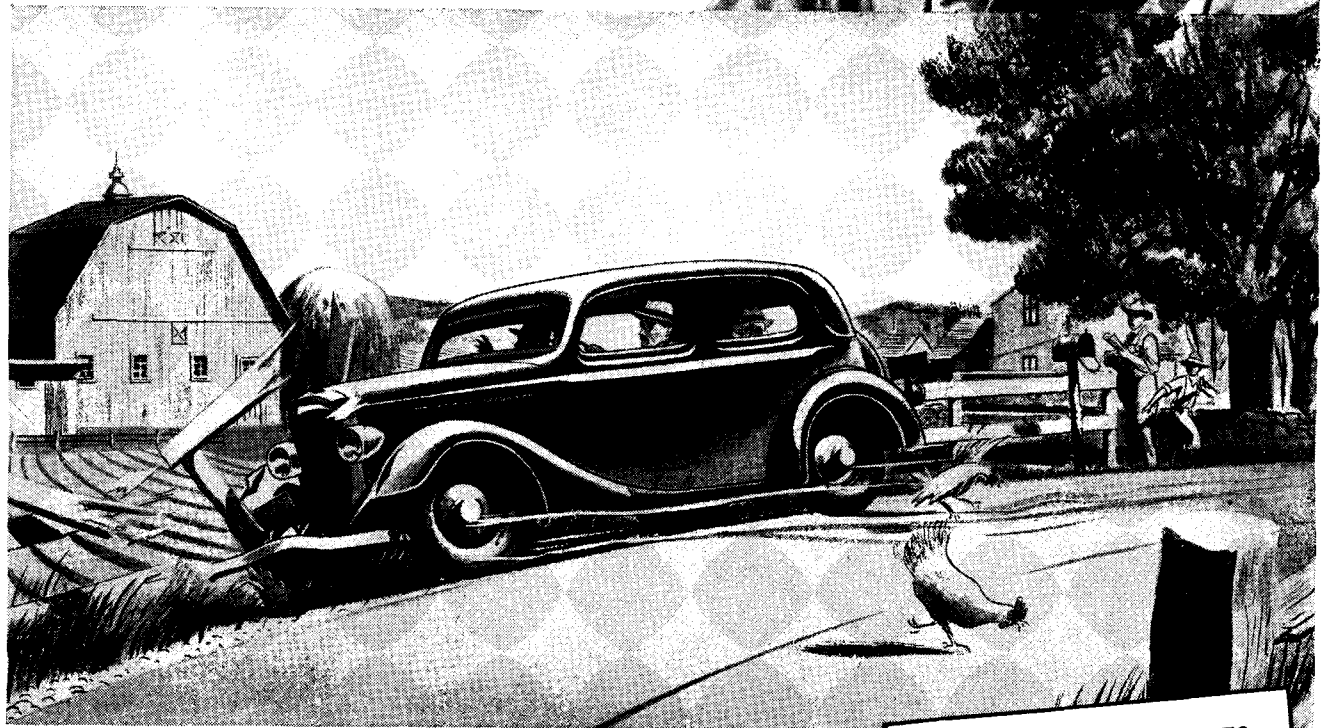
BANG! Then What?

He was whizzing along at a good clip. He had the North Ford Road practically to himself when BANG! Quicker than a Texas Ranger could draw a gun, the right front tire blew out. An uncontrollable drag yanked the car smack alongside of a guardrail. Flying wheels mowed down fence posts. Seconds seemed hours before the wildest ride Mr. Zachary ever had came to a sudden halt.

It took plenty of starch out of him and he's now a sadder but wiser motorist. And he'll tell the world that it pays to think twice before taking chances on tires.

The cards may be stacked against you when you gamble on tires. Today's streamlined cars and faster driving conditions call for a special tire.

Many of the blow-outs you hear and read about are due to the terrific heat generated inside of all tires by today's high speed driving. This heat may cause rubber and fabric to sepa-



The right front tire blew out. Flying wheels mowed down fence posts.

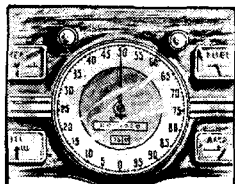
rate. And if it does, an invisible blister forms. Bigger and BIGGER it grows until, sooner or later, BANG! you have a blow-out. Where you might land, what you might hit, nobody knows.

The Goodrich Safety Silvertown is just the kind of a tire you need to give you real protection against blow-outs like this. It's the only tire with the Life-Saver Golden Ply. This life-saving invention is a layer of special rubber and full-floating cords, scientifically treated to resist the treacherous blowout-causing heat generated inside all tires by today's higher speeds. By resisting this heat, these

Golden Ply Silvertowns give you, and everyone that rides with you, real protection against those high-speed blow-outs.

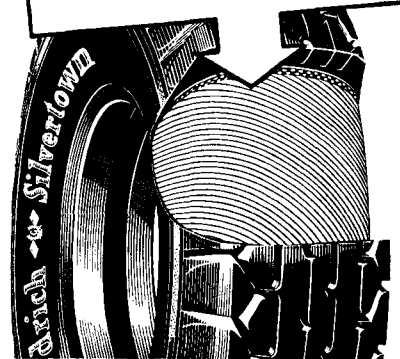
Edward Zachary has no desire to go through the mental anguish of another blow-out. From now on you'll find his car equipped with Silvertowns. For your own peace of mind—for the protection of your family and friends make your next set of tires Golden Ply Silvertowns. You pay no price premium for these life-saving tires and you'll find them on sale at Goodrich Silvertown Stores and Goodrich dealers everywhere.

Zane Grey.



Thousands of motorists are killed or injured every year when blow-outs throw cars out of control. Many of these blow-outs are due to heat generated inside of all tires by today's high speeds.

**HEAT CAUSES BLOW-OUTS.
PROTECT YOURSELF AGAINST
THOSE BLOW-OUTS
WITH THIS HEAT-RESISTING
GOLDEN PLY**



Goodrich SAFETY Silvertown

With Life-Saver Golden Ply Blow-Out Protection

Smart Work

Continued from page 19

not. "No, lamb." She turned to Barty. "Listen to him and you'll have cauliflower ears, a broken nose, a few dainty beauty scars over your eyes and some day you'll run a gym like Hubert Lacey."

"Lay off, Judy," Lacey, on the other side of Vincent, spoke up. "These boys have got to fight tomorrow."

"What for?" she asked. "To build circulation for the Enterprise?"

"You're a lot of help," Lacey was annoyed. "Why don't you be a good girl," he suggested, "and go into your dance?"

"You're Judy O'Grady," Barty said, his brow wrinkled as he strove to recall something.

She smiled. "Yes. I know what you're thinking," she said. "It happens so often. Judy O'Grady and the Colonel's lady are sisters under the skin. And I'm the daughter of Rosie O'Grady. That's why I chose it for my theme song." She looked around at the orchestra, waiting for her cue.

"You wouldn't be so nice to the champ if you knew what he said about you, Judy," Vincent smiled and looked over at her.

She looked back. "What did he say?"

"He said that as a dancer you're a faker."

Barty could have landed upon Vincent's chin with a good deal of pleasure at that moment. "I didn't say that," he protested. "I said you were faking triple wings and trenching."

She studied Barty a moment in surprise. "What big eyes you have, gran'pa—the better to see me with, I suppose. I'll bet you never fake in the ring, do you?"

Barty felt his face getting red. "Come and see me tomorrow night," he invited. "You'll probably find plenty to criticize about my style, too."

The orchestra sounded a chord. "I wouldn't miss it," she said as she floated away in rhythm.

A CONE of white light beat down upon the ring mercilessly, throwing the warp and weave of the canvas into relief. Barty could feel the weight and rumble of the crowd beyond its pale. This was his third bout within seven hours. So far, he had survived, but he was becoming weary of the thinking and mechanics of fighting, and the black boy opposite had been giving him a hard time of it for two and a half rounds. They had a half minute to go in this appointed three-round elimination and he was frankly afraid that the black boy might get the decision on points. He couldn't knock him out. It was like punching a tackling dummy, a dull thud each time and no reaction. The backs of his hands were sore. He felt every punch through the bandage and adhesive. There was something wrong about these gloves. He must speak to Lacey about it.

He ducked a fast and vicious left, blocked the black boy's right and landed a right in the exact center of the black boy's breadbasket, forcing him against the ropes in a neutral corner, but the blow had no other effect. The gong sounded and both sighed with relief. This was the black boy's third fight of the day, too, and he was sick of fighting. Unwittingly the black boy leaned back upon the ropes, resting his elbows upon them, looking across the ring through the glare at the yelling mob beyond; and, quick-wittedly, Barty jumped forward, put his gloves under the black's elbows and escorted him to his corner.

The black boy couldn't think fast

enough and allowed Barty to do it. He wasn't out. He wasn't even winded. Actually he was in better shape than Barty and yet the impression was created that Barty had to assist him to his corner.

The referee walked over to the judges, picked up their slips, walked over to Barty and held up his hand. Lacey grinned and patted his shoulder affectionately.

Walking around the ring to the aisle, Barty saw Judy O'Grady in one of the press seats. He waved a glove. She smiled faintly and nodded.

BACK in the dressing room Barty lay prone upon the rubbing table, his chin pillowed upon his forearms while Lacey rubbed his back. The doctor probed his thumb and the backs of his hands tenderly and gently.

"There's something the matter with those gloves, Lacey," Barty began. "They seem to weigh all right, but it's funny, they make my wrists awfully tired and the backs of my hands get sore."

Lacey's rubbing slowed down and, looking up, Barty could see the train-

Barty lifted his chin from his forearms. "It's a good face," he said, "the only one I've got and I don't want to get it marked up."

Lacey shook his head. "I knew that O'Grady dame was bad news last night. She gave you that idea. You never had it before today. Now get what she said out of your mind. She's wacky."

Barty straightened up. "She's not wacky," he said. "Did you see Swede Olsen? His nose is broken. It will probably be crooked for the rest of his life. These are amateur bouts. I'm not getting a dime for this. If I win, I get a silver belt. So what? I'm not going to get all marked up for that."

Lacey continued rubbing. "You'll get a chance at the champion."

Barty dropped his head back upon his arms again. "That's what the Enterprise says," he answered. "I'm beginning to wonder."

Lacey slapped his shoulder. "You won't get marked up," he assured him. "Don't worry. Get over on the cot now. Lie down and relax. The doc and I are going out for a smoke."

"Do you see what I see about those



er's and doctor's reflections in the mirror above the washstand, but they did not know it. The doctor was examining one of the gloves and, looking at Lacey, shook his head. Lacey patted Barty's back gently and resumed his rubbing with a will.

"There's nothing the matter with the gloves," he said reassuringly. "We'll talk about that later. Listen to me carefully now. You're going in for your final elimination bout in about two hours."

Barty stiffened suddenly under his hands. "What? Again?" he protested.

"Yes, again," Lacey answered. "The Enterprise wants to get all of the eliminations over today. You and Bugs are the only fighters in the team I have left. You two have got to come through," he went on. "I want you to relax and rest until the doc and I call you for your bout. You're up against young Bartolini and he'll be easy to take if you do what I tell you. The main thing to remember when you're out there is to stop hiding your chin behind your left shoulder and don't pull away trying to save your face. You've done that in every set this afternoon. What's the matter with you?"

gloves, Doc?" Lacey asked when they were in the smoking room.

"I'm afraid I do," the doctor nodded. "I never saw anything exactly like them before. They're regulation weight—six ounces. I weighed them; but the packing is all in the wrists. That's why the kids complain about the weight and bulk there. There's almost no packing on the backs. They're fighting practically with bare knuckles."

"Knockout gloves," Lacey said. "Get it? The Enterprise wants action. They want plenty of blood and gore; snappy action pictures for the photographers. Good fights and good pictures sell papers. Exactly what is Branigan's condition?"

"Not so good," the doctor admitted. "There's a good deal of swelling. His thumb's sprained. He can last just about three more rounds."

BACK in the dressing room Barty was dozing when Lacey shook him.

"Come on," he said. "Pretty near time."

Barty sat up, held out his hands. They were puffed and discolored. The doctor pressed them lightly and silently began applying bandage and adhesive.

"You're my last man, Barty," Lacey put his arm about his shoulder. "Don't go back on me if you can help it. Bugs was washed up in the last fight. He tried hard. Remember what I told you about that chin. Come on!"

Midway in the first round he decided that it wasn't necessary to remember Lacey's advice about his chin. He was faster than this kid Bartolini and could duck in and out at will. Bartolini landed a few love taps, but the judges were too clever, he was sure, to count these as points. There was no sense in sticking his neck out and letting Bartolini land on his chin or nose.

"Get that chin up. Remember what I told you," Lacey reminded him while working upon him at the end of the round.

Barty was fresh again when he hopped out of his corner. He might even be able to put Bartolini away, except that his right thumb was beginning to stiffen. He unleashed a right for Bartolini's chin. Bartolini blocked it and hooked his thumb. A stabbing pain shot up Barty's forearm. He decided to hold Bartolini off for the rest of the round. Bartolini let loose a left. Barty dropped his chin back into the hollow at the left of his neck and took the blow on his shoulder. He was feeling the symptoms of wear when he came back into his corner.

LACEY received his teeth protector, had him rinse out his mouth and rubbed him. "This is the last round," he said. "Everything depends upon you now, Barty. Get that chin up and go in and lick him. You can do it."

Barty danced out into the center of the ring. The customers were obviously with him. He could feel it and tell it by the yells that were coming over to him. This one must count, he decided. He brought the fight in to Bartolini, but Bartolini apparently had the same idea. They sparred and exchanged punches. Bartolini reached his jaw. Barty dropped it. They clinched and separated. The rest of the round was a haze. Vaguely he realized that his thumb was numb. Unconsciously he hid his chin behind his right shoulder, but determination was uppermost and he forced the fight for the rest of the round. Dimly he realized that of all three rings this one was now the center of attention and the customers were in their seats yelling at the end of the round.

Lacey was in his corner to receive him and patted him on the shoulder. "Nice work," he murmured as he removed the teeth protector, swabbed him off and helped him into his robe. The referee walked over to the judges, picked up their slips and started toward Barty as he read them. He halted suddenly, turned around in the glare of the cone of light, walked silently over to Bartolini and held up his hand.

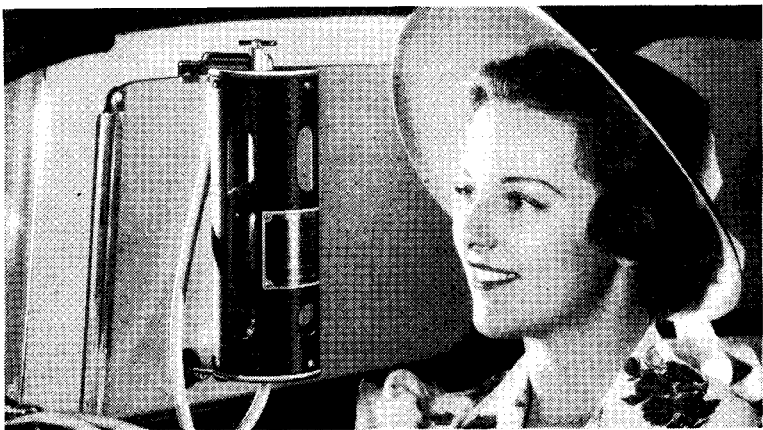
Lacey and Barty followed his progress unbelievably. There was a roar from the customers and above it all, one word rang out: "Robbery!"

"Come on, Barty!" Lacey said.

In the dressing room the noise of the arena became an echo. The doctor worked on his thumb and hands while Lacey rubbed him down. "Don't take this too hard, Barty," Lacey counseled. "You fought a good fight and you won, but the other guy got the decision. Those thieving bandits at the ringside were blind. You were cheated."

As he was dressing, Barty decided that he was glad that it was over and when he had combed his hair and put on his hat, Lacey put his arm around his shoulder. "Come with the doc and

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"It was proved to me before I bought mine that Dodge is a wonderful gas saver," says Catherine K. Gallagher, Chicago. "I actually watched the gasometer work on one of the dealer's cars. The gratifying part is that it averaged 20 miles to the gallon and my Dodge actually gives me 21 miles to the gallon."



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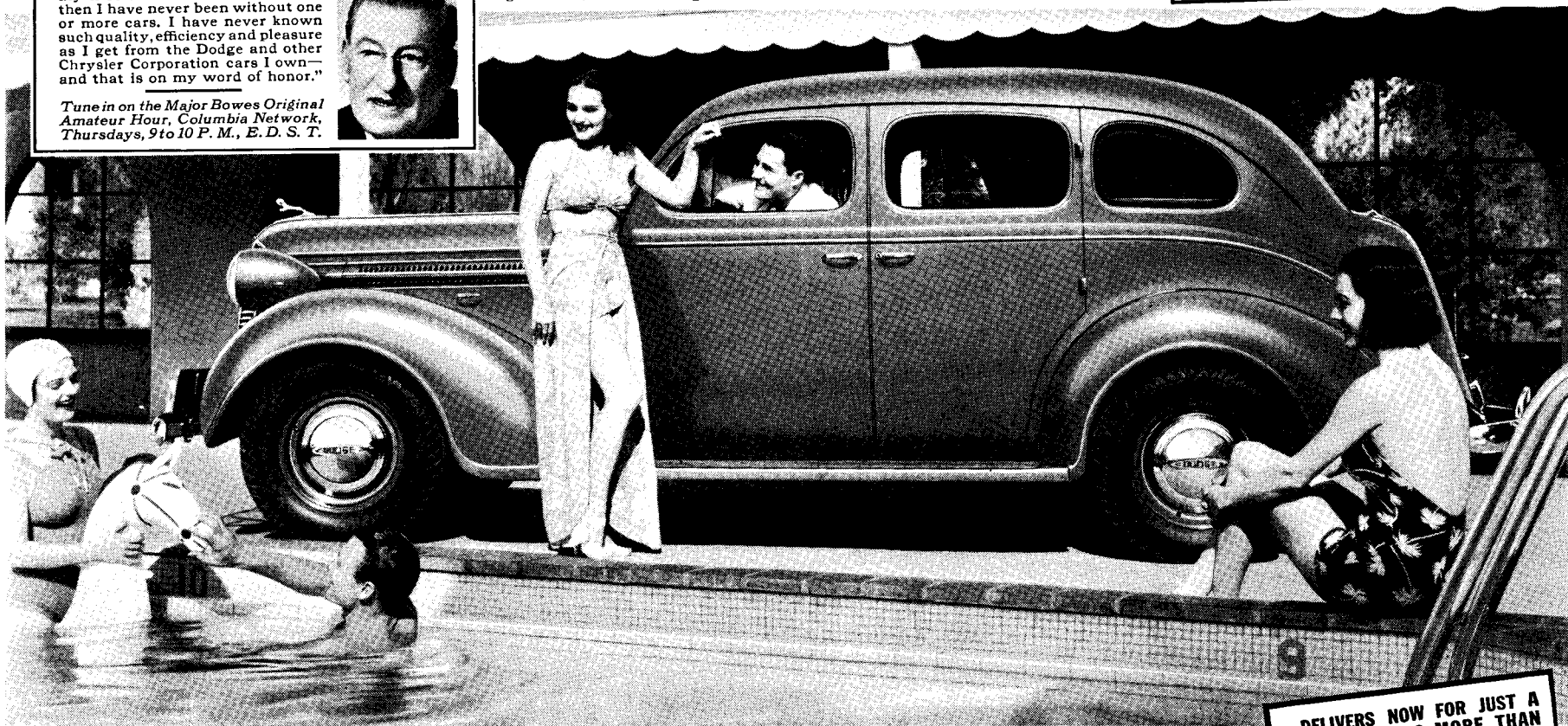


"I was convinced that Dodge was a record-smasher for gasoline savings when I watched the gasometer test," says Edward W. Mueller, St. Louis. "Seeing is believing—and I bought a Dodge. My car has averaged 20 miles to the gallon of gasoline consistently. And it is saving me money in other ways, too—particularly on oil and on service costs."

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me," he invited. "No more training now. You can eat what you like and do as you please. Think of it. You can be a human being again." He patted his shoulder. "Vincent James is throwing a party at the hotel," he went on. "There'll be a lot of nice girls there and you can let yourself go." They were on the sidewalk now. Lacey whistled for a cab and put Barty in it between himself and the doctor.

The hotel suite was hazy with smoke that hung in level floating clouds about the pink shades of electric lamps. There were about half a dozen men and half a dozen women sitting about on divans, wing and low chairs. Judy was sitting upon the arm of a chair and Vincent was mixing drinks.

"Hi, Doc. Hello, Lacey," Vincent looked up and greeted them casually. "What'll yours be, Judy?"

"Plain ginger ale," she said.

Barty silently approved of that. He didn't drink either. He took off his coat and threw it across the crook of his arm. Vincent handed Judy her drink and poured one for Lacey and the doctor. "How about you, Barty?" he asked.

Barty shook his head.

Vincent handed the drinks to the doctor and Lacey and extended his hand to Barty. "I want to congratulate you, Battling Barty Branigan," he said as they shook, "upon an excellent fight. I can't tell you how sorry and disappointed I am that you lost, but you were robbed. Wasn't he, Judy?" he turned to her for confirmation.

"I don't think so," Judy said quietly. Barty's jaw dropped and his brow clouded as he looked at her.

"Pipe down, Judy," Lacey, now seated, looked up over his drink.

Judy stood up. "No, I won't pipe down," she said. "You've all been taking advantage of him and it's time he came to his senses." She walked over to Barty and looked up into his eyes. "What are you being such a fool for, Barty Branigan?" she asked.

"What do you mean?" He was puzzled.

She shook her head. "You're supposed to be a smart fellow, Barty," she said, "but for a banker, you're too trusting. Don't you realize yet that you're just another fall guy. Look around you. Everybody got something out of this tournament but you, and all you got was a beating."

Vin James got up, came over and touched Judy's elbow. "Come," he said. "Drink your ginger ale."

Barty dropped his coat. "No," he said. "You keep talking, Judy. I'm still shy one knockout and maybe I'll deliver it right here. If I've been robbed, I want to know how and by whom. This thing has had a funny smell all day, and I'm just beginning to come out of the fog. Go away!" He pushed Vin James away from her. "You said I wasn't robbed?" He spoke to Judy.

SHE shook her head. "No. You were not robbed," she repeated. "These people are all kidding you, and you look too honest and too decent to be sidetracked into this racket. Lacey, the doctor and Vin James all got paid for you. What did you get? You lost fairly to-night. Bartolini won on points. You made a fortress of your left shoulder and hid behind it as though somebody was throwing snowballs instead of punches at you."

"That was your fault," Lacey spoke up from the chair. "You cracked wise about cauliflower ears and broken noses last night and he couldn't get it out of his mind."

Barty looked down at his swollen hands. "What about those gloves?" he asked Lacey.

"Ask Vin James," Lacey nodded toward the other side of the room.

"Don't look at me," Vin said. "I didn't have anything to do with them." He got up to put his glass back on the table.

"Then they were phonies," Barty said. Judy patted his shoulder approvingly. "You're beginning to wake up."

He nodded. "Yes, it begins to dawn now. This whole setup was framed for action; a stunt to build circulation at the expense of a lot of saps like me." He walked over to Vin James.

You've got this one coming to you, James. Here's the haymaker."

His puffy fist cracked against Vin James' jaw. A piece of ice sailed through the air and a glass crashed upon the table as Vin toppled over Lacey's chair and came to rest in a corner by the radiator.

Barty picked up his coat. "A vote of thanks to you, Judy O'Grady." He waved his hand in salute to her as he walked toward the door. She watched him, breathless and wide-eyed. "And when he comes to," he nodded toward Vin and addressed the room, "tell him I said thanks for the use of the hall."

JUDY O'GRADY sat at her dressing table in Jerry Delaney's and looked down upon the streamer headline on the sports page: "Bartolini Liquidates the Banker," she read. "That's mean," she thought as she looked up at her reflection and completed her make-up. Ten minutes later she came tapping out of the side door in the curly maple paneling with a simple clog-time step into the semicircle in front of the orchestra, and, looking about the diners, almost missed a beat in surprise. Barty Branigan sat alone at a wall table. Her eyes lighted. She cupped her hand and gave him a quick wave. She decided that she was glad that he was here. He was a nice guy. Barty watched her routines critically, wrinkled his nose unconsciously at the faking, and applauded despite the pain in his hands. She came back for a couple of encores, but the third time held up her hands for silence.

"There's a little matter of unfinished business I must attend to," she said. "I'll be back and dance for you later." She walked over to Barty's table and her ballet skirts swished as she sat down. "Are you through with fighting?" she asked him.

"I am." He smiled across the table. "And back at the bank where you belong?"

He shook his head. "No," he said. "Why not?" She looked up anxiously.

"They won't have me," he said. "The president and the board of directors have decided that all of this publicity makes me undesirable."

Judy straightened up. "Nice people. So you haven't got a job now?"

"Not yet," he said.

"What are you going to do?"

"What you're doing," he said. "Dance. I'm a better dancer than boxer and I don't fake. If you can get away with it, I can stop the show because I can give them the whole book."

Judy smiled and shook her head, unbelieving. "You don't exactly hide your light under a bushel, do you?" she asked.

He shrugged his shoulders. "Why should I? I know I'm good. I'll prove it to you," he said. "Tell that band leader to play your numbers. We'll give them a show. You taught me a lot about boxing last night. I'll teach you a thing or two about dancing."

She drummed upon the table for a moment and suddenly decided. "Okay, Barty. You'd better be good." She got up and he followed her out upon the floor into the semicircle before the band. She gave the band leader a nod and turned to the diners.

"I have a little surprise for you to-night, folks," she announced. "First, I want you to meet Barty Branigan, the battling boxer from Bellview." She turned to Barty in the spotlight and held up his hand in the manner of a referee. "You've been reading a lot about him lately," she went on. "He was robbed of a decision in the arena last night and tonight he meets me in three rounds of tap dancing. All right, Frank," she nodded to the band leader, and to the tune of The Daughter of Rosie O'Grady, Judy and Barty stepped off.

Judy discovered that Barty had not underrated himself; so did the customers and so did Jerry Delaney, arrested in a doorway watching them, a cigar hanging loosely at the corner of his mouth. The kids, he decided, made a perfect team. Some of the diners were standing up when they finished and the applause was deafening.

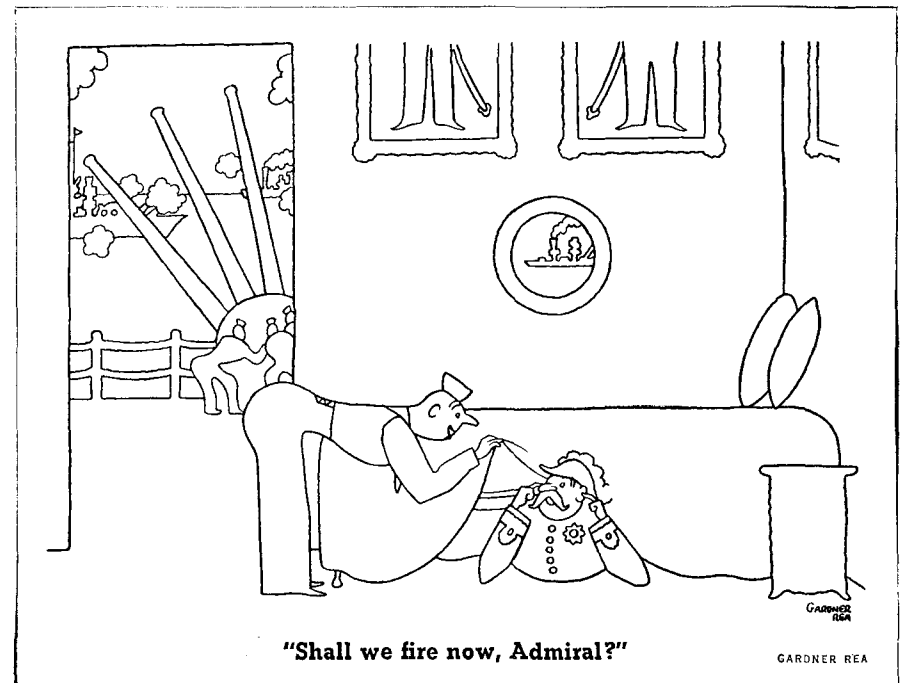
"You can do them and you don't fake," she conceded during the break.

"A cinch," he whispered as they took a bow.

AFTER the next number she squeezed his arm as they took the bow. "You're all set, Barty Branigan," she told him above the applause, smiling her admiration. "I've been looking for you for a long, long time and I'm glad I found you."

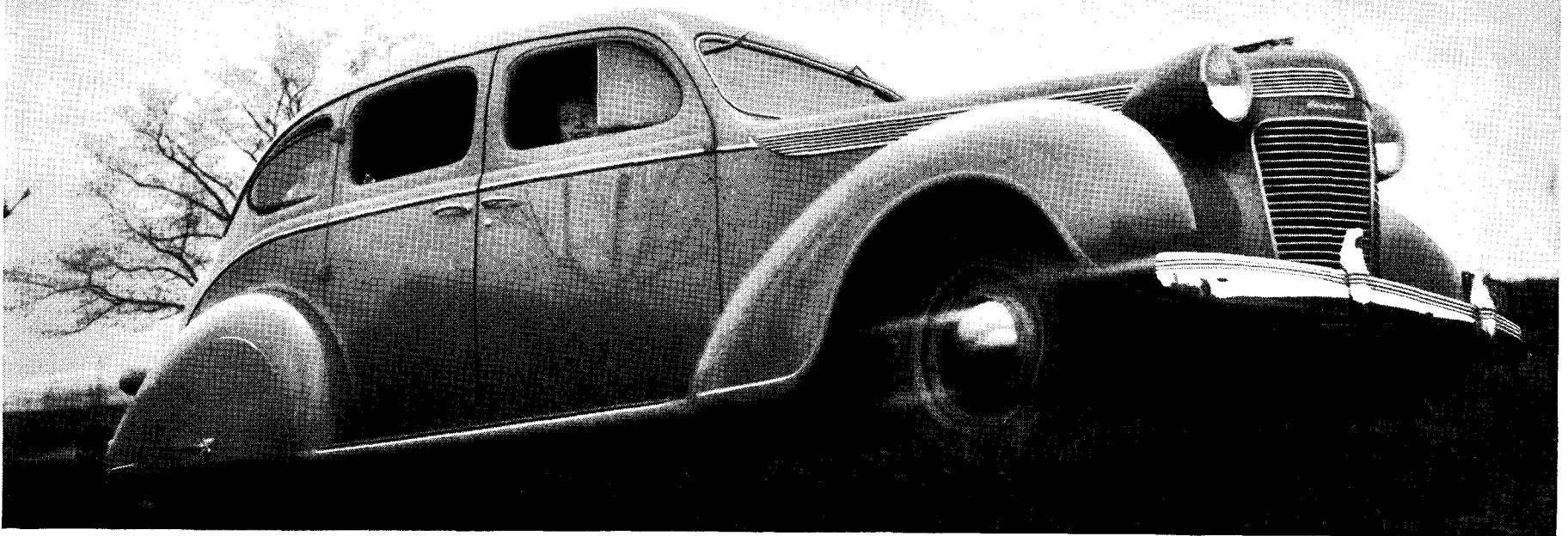
"Me, too," he echoed.

They took another bow. "We'll go places together," she told him as they did a clog-time step to the door in unison, executed a clog break and disappeared behind the curly maple paneling.



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Sophisticated Lady

Continued from page 21



DO you look like a store dummy from the ears up after a dip in the pool or sea?

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NOT GREASY—MAKES THE HAIR BEHAVE**

over it into deep grass. He gave Harriet his hand and she got onto the upper rail, then swung off into his arms. He clasped her tightly to him. He kissed her and she responded warmly, clinging to his lips for a long time. He had never known how much a kiss could mean. He was tremendously thrilled, and just the least bit frightened by it.

"Oh, Allen, darling," Harriet whispered in his ear, tremblingly. He took her hand and they began walking toward the hills. Under some oaks, on a large cushion of oak leaves, they sat down with their backs against a hummock and looked out over a red-and-yellow valley. Allen stretched out on his back with his head in Harriet's lap and let her play with his hair.

"YOU haven't told me anything about yourself," he said.

"Nothing much to tell. I'm just a working girl. Had to give up school a long time ago to help Dad out. I'm private secretary to Mr. Golding, of the Golding Furniture Company, of which you've probably never heard. All day I answer letters, talk to people on the telephone." She sighed and Allen felt sorry for her.

"Don't you like your work?" he asked.

Harriet shook her head. "It's deadeningly dull. And there are so many things I wanted to do—interesting things."

"Music? Art?" Allen asked.

Harriet was a bit disturbed. "Oh, all sorts of things. Trouble is, I never had a chance to find out what my talents are. And I don't suppose I ever will, now. Funny, but I don't feel nearly as bad about it as I used to." She looked at Allen wistfully. Allen reached up and kissed her. "I'm so happy," she said. It sounded sad, though, and Allen found himself comforting her. He said he was happy too. But his happiness frightened him. It was so intense that it hurt and he sensed that it was dangerous.

He was in love with Harriet, frighteningly so, and he felt launched upon a great, dangerous adventure. She had taken complete possession of him. All other considerations lost their importance. His studies irked him. He began to feel burdened by his parents' too-evident faith in him—by the responsibilities imposed upon him by their ambitions for him. He became irritable and quarrelsome.

Harriet would see him but two evenings a week and he became more and more madly jealous of her other evenings. But when he showed that he was jealous, she either teased him or became evasive. Yet she made him feel that there could not possibly be another man with any claims on her.

Early in their relationship there were moments when he felt like a trapped animal when he was with her. Later, in her presence, he alternately loved and hated her. Hated her so much, at times, that he swore to himself that he would break her hold upon him. But when he was away from her he could think only of her warmth and of her softness and it made him ill with desire.

He was strongly obsessed with the sense of an impending climax. An open profession of love seemed inevitable. There had not yet been one on either side and he guessed that she was waiting for him to speak first and that each time he left her she was disappointed in him for not having spoken. But he had never avowed love to any girl and he didn't believe he could ever get himself to say the words which held for him a special kind of terror.

The end of the fall semester found him separated from his friends, alienated from his parents—and with conditions in physics and in mathematics. He had expected to fail in the examinations in the two subjects and had been terribly worried, but now it no longer mattered much. Nor did building bridges. He wanted only to be with Harriet.

One cold snowy evening, early in February, he went to call on her, certain that something would happen to commit him to a course of action from which there could be no withdrawal. At her door he almost gave way to an impulse to retreat, but the desire to see her was too strong; he would have dared disaster for one kiss.

When Harriet opened the door for him, he embraced her so violently that she gasped. "You're crushing me!"

"Don't laugh," he said shakily. "Not tonight."

They sat down on a couch in the parlor. He looked into the next room.

"It's all right," Harriet said. "We're alone."

In relief, Allen put his arms around her and rested his head on her shoulder. They stayed that way for some time, and then Harriet wanted to dance. She got up and put a record on the phonograph. The selection was a slow blues number. Harriet reached her hands out to Allen and he stood up and put his arm around her. They began dancing with slow, lazy steps. Gradually their movements changed from a dance to a swaying embrace. Allen put his burning cheek next to Harriet's.

"Say it!" she whispered in his ear.

"Say it!"

She clung to him with all her strength. "Say it!"

It infuriated him, the way she kept repeating the command. What did she want of him? He hated her, despised, loathed her.

"Say it!"

HE TRIED to close her lips with a kiss but she resisted with surprising strength. He couldn't pull her head close enough to his without exerting himself so that there was fear of hurting her. Her head was bent stiffly back, the cords in her neck were taut. In fascination he watched the pulse flicker at the base of it. But there had to be an end to this; he could no longer stand the strain of the pull of her body on his. He raged inside himself. All right, he'd say it! He'd do what she wanted, go away and never come near her again. He bent his head, closed his eyes and the hateful words, though they almost choked him, somehow came out:

"I love you."

He broke away from Harriet and went to lean his hot forehead against the cold window pane.

"What's the matter?" Harriet said. Allen turned around. She was standing in the center of the room, startled by the expression on his face. She looked at him as if at a madman. Suddenly Allen stepped out of the room, called "Goodbye" from the foyer, and went out of the house.

His shoes crunched squeakingly through the dry snow but he was conscious only of a vast, toneless humming in his head. He walked on and shortly found himself quite alone in the park. He was soothed by the cold, sadly peaceful setting and his determination to break with Harriet quickly weakened. As always, her hold upon him was strongest when he was away from her. And now she became more de-

sirable, more positively necessary to him than ever. He made his decision almost without admitting it to himself, but once it was made he considered the problem coldly and dispassionately. Clearly, there was just one thing to do: marry Harriet. As soon as possible. He'd give up school, sell his car for the cash immediately necessary for setting up a small home—a two-room apartment, somewhere—and then he'd find a job. He was clever with tools; he was strong and he was willing to work. He had taken his own car apart and put it together more than once; surely he'd be able to get work as an automobile mechanic. Eventually he'd have his own repair shop. They'd get along somehow.

HE LEFT home early the next evening, foregoing supper, to his mother's distress, and phoned Harriet from the ice-cream parlor around the corner. "Hello, sweetheart. May I see you this evening?"

"Well—you're a queer one!" Harriet said.

"Oh, about last night—I'm sorry and I can explain that. And I've got something important to tell you."

"Couldn't you make it tomorrow, instead? I'm not feeling very well and—"

"Not well?" Allen said anxiously. "I'll be right there. Goodbye." In his nervous haste he hung up the receiver before Harriet had had a chance to say another word, and hurried out of the phone booth.

He found Harriet alone. She didn't look ill—not because she didn't try to, but because she was obviously dressed to receive a visitor, and Allen was tortured with new doubts.

"You shouldn't have come," Harriet said.

"But I had to when you said you were ill," Allen protested.

Harriet let him sit on the couch with her and hold her hand, but not too willingly, he suspected. For the first time since he'd known her, she seemed to have lost her poise. She withdrew her hand, closed her eyes and rubbed her forehead. "I think you'd better go, Allen. I'm going to bed," she said.

"But I can't leave you alone, sick like this!" Allen felt ashamed of his suspicions. He believed now that she was ill, because he wanted to believe it.

"Please—" Harriet started to say something and then the doorbell rang. She looked nervously at Allen and went to the door.

"Hya, baby?" a deep voice said when she had opened it. Allen heard her whisper something and saw her step back to avoid encircling arms which thrust through the open door. Behind the arms appeared a stout man of about thirty-five, prosperous-looking in modish clothes. He glanced at Allen, then at Harriet and said, "Oh!"

"Perry, I want you to meet Mr. Allen Tarlow," Harriet said, struggling to regain her composure. "Allen, this is Mr. Perry Golding."

"Glad to meet you, young man," Mr. Golding said, patronizingly extending his hand. Allen wanted to punch the fat face. He stood with his hands clenched tightly behind him, staring at Harriet for a moment, then pushed past both of them and through the doorway. As he raced downstairs he thought he heard them laughing behind him. He wished that he were dead.

When he got home his mother and father were sitting in the living room listening to the radio. Without any greeting to them, he went to his room and closed the door.

Mrs. Tarlow got to her feet and started to follow, but Mr. Tarlow gently took her hand and shook his head and she sat down again.

Allen stretched out face down on his

bed and waited for his heart to give some sign that it was breaking. He almost expected to hear it snap. But nothing like that happened. Strangely, too, he discovered that he no longer wanted to die. As with one who fights his way back through deep water to the safety of shore, there was a sweet feeling of relief which obstinately diluted his sorrow. He tried to fight it off because it seemed treacherous to his nobler instincts, but it grew stronger and stronger and he had to admit to himself, at last, that what had happened at Harriet's house was a piece of good fortune rather than a calamity. With this admission he felt cheapened, terribly ashamed of himself, and terribly stupid.

A little while later Allen came to the living-room door and Mr. Tarlow gave his wife an I-told-you-so look. Allen smiled foolishly at them.

"Anything interesting in the refrigerator, Mom?" he said.

One afternoon, soon after Allen was back at his studies again, he met Ruth Hickson on the street.

"Hello," he said.

"Oh, hello," Ruth answered without stopping.

"Just a minute," Allen said.

Ruth was annoyed but only for a moment—Allen looked so humble.

"Yes?" she said.

"Have you seen Janet lately? How is she?"

"Janet seems quite well."

"That's good—well, so long."

"So long," Ruth half turned to go, then said, "Little party at my house tomorrow night. Janet'll be there," and hurried away.

"Thanks!" Allen called after her.

It took courage to go to the party after having been away from the crowd for so long and when Allen got there it was in full swing. He was welcomed with cries of "Look who's here!" and "Hello, stranger!" which embarrassed him but made him feel good at the same time.

JANET, standing in a far corner of the room, didn't seem to notice his presence. Two young men were talking to her and she was sweetly absorbed in what they were saying. Allen elbowed his way to her through the crowd.

"Hello, Janet. Hello, fellas," he said shyly.

"Oh, hello," Janet said. She glanced at him and then turned back to the others.

Janet had changed, somehow, Allen thought. It disturbed him. He rubbed his eyebrow and said, "May I have this dance?"

"But the floor's so crowded," Janet answered.

Allen blushed, then laughed. "Oh, we'll manage." With sudden bravado he firmly took her hand.

"Pardon me," Janet said to the other two young men, with a slight shrug of her shoulders.

Dancing with her, Allen noticed that she had grown taller. But much more important was her new poise. That was it: Janet had grown up.

The dance music was interrupted by a station announcement. They stood still, facing each other. Allen tried hard to say what he felt, but all he could do was look pleadingly at her. She met his gaze easily, with a suggestion of amusement in her eyes and in the puckers at the corners of her mouth—with a hint of the power of her maturing perception.

Janet had grown up. That, he told himself, was to be his punishment.

But then the music started again and when he put his arm around her waist she smiled at him and he dared to hope that the punishment would not be unendurable.

HER SMILE WON HIM

...But her breath lost him



I HEAR TOMMY BLAKE FELL HARD FOR YOU TONIGHT, HELEN. LIKE HIM?

HE'S AWFULLY NICE! BUT HE ONLY DANCED WITH ME ONCE, PEG!



I THINK I KNOW WHY, HELEN...BUT IT'S HARD TO SAY IT! SOMETIMES YOUR BREATH...OH WHY DON'T YOU SEE THE DENTIST TOMORROW?

MY BREATH! WHY PEG, THAT CAN'T BE...BUT I'LL SEE DR. ELLIS



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CASTING DIRECTOR

If you should see a group of grim-faced men flinging a fishing rod and line over their heads while standing on a perfectly dry lawn, hesitate before you phone for the strait-jacket squad. Maybe they are fly casters preparing for their annual tournament to be held next week. We asked the current champion, Marvin Hedge, about the sport and here we give you his answer

BY FRANK J. TAYLOR

GRUFF and tousled old Lew Stoner poked the tip of a new fishing rod into a handle, squinted along the tapered bamboo, then handed it over to Mr. Marvin Hedge, pride perspiring from every wrinkle in his face.

"What do you say?" he asked, parking his fists on his hips.

Mr. Hedge wagged the rod back and forth appraisingly. He balanced it critically. Then his face broke out in smiles and he beamed on Mr. Stoner.

"It's all right, Lew. It's a honey."

He whipped the air briskly with the rod, then passed it to me. Now if you haven't been brought up to think of ten-foot split bamboo rods as honeys, it's a little hard to talk of them as such. But as soon as I got this one in my hand I knew it was just that.

"What is it you want?" I asked. "Whip?"

"No," explained Mr. Hedge. "Feel. A rod just has to feel right—that's all."

This one had to. Marvin K. Hedge was counting on that rod to make history on July 4th in Paris in competition with the premier fly casters of France, Belgium, England, Norway and sundry other countries in the international casting classic. With every fishing-rod manufacturer in the country eager to provide the split bamboo for the European invasion, Mr. Hedge had come down from his home in Portland, Oregon, to camp on the doorstep of Lew Stoner, who turns out custom-built casting poles in San Francisco.

Balancing the line is an all-day ceremony with Marvin K. Hedge, American champion distance fly caster

Mr. Hedge, in case you don't know him, is not only a devoted disciple of Izaak Walton, but likewise champion distance fly caster of the United States. He plucked that honor out of the air last August when he sent his line whistling 151 feet across the water at the national tournament of fly casters in Portland, Oregon.

Between us, that is quite a cast, with no weight on the line. Most anglers are tickled with fifty-one feet without the hundred. Until 1934, when this Mr. Hedge returned to the game after backsliding to golf for a decade, it was generally conceded that a man's ability to cast an unweighted line through the air was limited to around 120 feet. A 120-foot cast will still put an angler in the front rank in a European tournament.

But not in this land of anglers. Mr. Hedge hit upon his revolutionary casting technique just about the time that Mr. Lew Stoner discovered a new way to put strips of split bamboo together. These two ideas were not related in any way. But, bursting simultaneously upon the angling fraternity, they added more distance to fly casting than the previous thirty years of whipping the ozone. Today, topflight artists at the sport are talking about the day when they will be tossing the fly two hundred feet.

This may be a momentous matter to you—or it may not. But the anglers of France considered it sufficiently serious to present the aforesaid Mr. Hedge with a round-trip ticket from Portland to Paris, just

to make sure that he would be demonstrating his stuff on the River Seine at the international tournament.

The French anglers got their money's worth, all right, when they saw Mr. Hedge in action in the international competition last month. He literally ran away with the field, winning the distance fly event with a cast a little short of the French professional record but good enough to top any competition. One of his casts in this event actually set a new mark, but was disallowed when the fly flicked the platform.

The highlight of the Paris meet, however, was Hedge's victory in the event on which he had really set his heart—the all-around competition in the professional class. "I didn't think I had a chance to win," he said later. "We had to play the game their way, not ours. But I won it, and that makes me feel pretty good!"

I had heard from various anglers of Mr. Hedge's radical notions about the ancient art of fly casting. Some thought his ideas were most unorthodox. Others hailed them as the coming thing. I was eager to get a line on his tricks and finally caught up with him in Lew Stoner's shop, where he was having his battery of rods serviced before departing for Europe.

"How'd you like to come along with me?" he asked. "I'm going out to Stow Lake to take a lesson."

"What kind of a lesson?"

"A casting lesson," replied Mr. Hedge, simply.

Then it came out that a Mr. Primo Livenais, who is a young San Francisco automobile mechanic of Basque descent, had heaved a surf line weighted with a sinker 623 feet, 10 inches, which is roughly an eighth of a mile. That cast made him the national champion among the surf casters. But Mr. Livenais was unhappy. And for good reason. When he attempted to fly-cast, his line fell to water at eighty feet, half as far as Mr. Hedge could cast it.

It turned out that Mr. Hedge, whose fly casting is so excellent that the experts in France wanted to see him cast, was likewise upset because he could not surf-cast at all. So the two champions had agreed to give each other lessons. I trailed along to see the show.

When Mr. Primo Livenais stepped up to the casting tee, it was clear why he is tops with the heavy forty-ounce surf rod. His arms bulge with Joe Louis muscles and his wrists are steel springs. When his two big fists grabbed the big surf rod, the plug was sure to go places. His was a game of strength.

An Artist Demonstrates

But Mr. Hedge's fly casting was something else again. He played with the rod and line as an artist plays on a violin—with no apparent effort at all. He flipped the line out over the ripples, leaning far forward to drop it deftly into the water, then raised his shoulders slowly, drawing the line in. Suddenly, with a snap, his rod jerked up straight over his head. His shoulders and arms pivoted. The long tapered line floated gracefully in back of him. Just as it reached the straight position a slow forceful down-swing of the rod sent the line shooting forward again.

"See, Primo? Now you do it," he said, handing the rod to the husky surf caster.

Mr. Primo Livenais loosed a forceful cast. The line spun around in a series of gyrations, then wound up in a knot around his neck.

"Too fast, too fast," warned Mr. Hedge. "That's the way you get flies in your ears. Try it more slowly."

Mr. Livenais untangled the line and cast again, more slowly this time.

"Forward to ten o'clock," coached Mr. Hedge. "No, that's nine o'clock. Too far. You lose control of your line after ten. Back now to twelve o'clock. Hold it. No, you pulled back too far. There's no snap left in your rod at two o'clock. Pull it up to twelve and next time give it more snap. Don't hurry it. Slow and smooth. Hold your rod when it points to the treetops. That's a good one. Now again."

Inside of ten minutes Mr. Livenais, who started out even as you and I to push the line out by brute force, was laying it on the water as gently and rhythmically as anybody could ask.

It was along toward sundown. One after another young men and old slipped into the little clubhouse, came out with poles and lines, took their positions on the several casting platforms, tossed their lines a few score times, then went their several ways. This was the home waters of the Golden Gate Fly-Casting Club, one of the big ones in the West.

At that same hour, in some four hundred other localities, anglers were doing the same thing. Particularly in Chicago, Cleveland, St. Louis, Seattle, Portland and Salt Lake City are the fly casters on their toes to stretch out their (Continued on page 44)