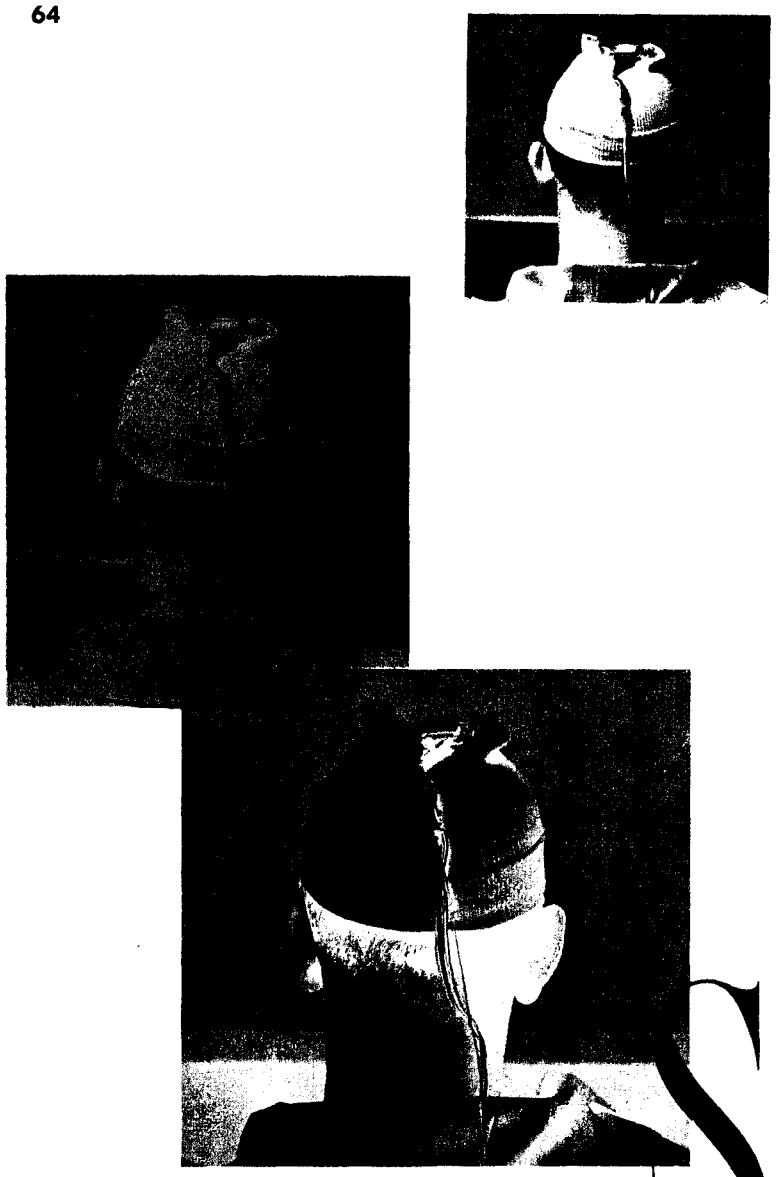


A novel brain operation and follow-up electronic treatment offer new hope for thousands of "hopeless" sufferers from "split minds." The technique is helping doctors to penetrate the dream-world refuge of victims of . . .

Schizophrenia

By TONI TAYLOR

DANNY is seven. When I saw him, he was in full Hopalong Cassidy regalia—from broad-brimmed hat to boots. He wore a red kerchief, knotted under his ear, and a shiny toy gun was on either small hip.

Danny was sitting on the floor, but not in the relaxed sprawl of a small boy tired from play. He was stiff and silent and stared straight ahead, not even blinking as figures moved across his vision.

"Hiya, kid," someone called from the corridor —but Danny paid no attention.

At seven, Danny is a victim of schizophrenia. The room where he spends his long, silent days is the men's ward of a state mental hospital in southern Louisiana. His companions are of every social level—boys around his own age as well as senile oldsters.

Danny is only one of more than 300,000 Americans suffering from schizophrenia, the dread disease whose victims withdraw from the real world into a world of fantasy of their own creation.

Most medical experts now hold that schizophrenia is not curable, but sometimes can be arrested. In fact, a whole new horizon of hope for Danny and his fellow victims has been opened up by an operation and follow-up treatment developed at Tulane University School of Medicine in New Orleans.

Perfected after years of experimentation with animals, the operation helps doctors explore the deep areas of the brain where the emotions are controlled and where changes have been observed in schizophrenia. In effect, the technique enables doctors to establish communication with these areas —an enormous advance in a disease characterized by the victim's refusal to quit his own dream world.

But before we go into details of the operation and some of the promising results achieved, let's consider for a moment just what schizophrenia is. Literally, it is a "splitting of the mind." The schizophrenic's thoughts and emotions go in opposite, rather than parallel, directions. As a result of that inner turmoil, the victim finds the real world around him too difficult to cope with; his only recourse is to withdraw from it.

While no respecter of age, the disease takes its greatest toll during adolescence and early adulthood—years of physical maturing which are also a time of emotional instability. What causes it is obscure and still conjectural. Some doctors believe that one cause—though neither the sole nor possibly even primary cause—is the failure of the victim's very first relationship, with his mother.

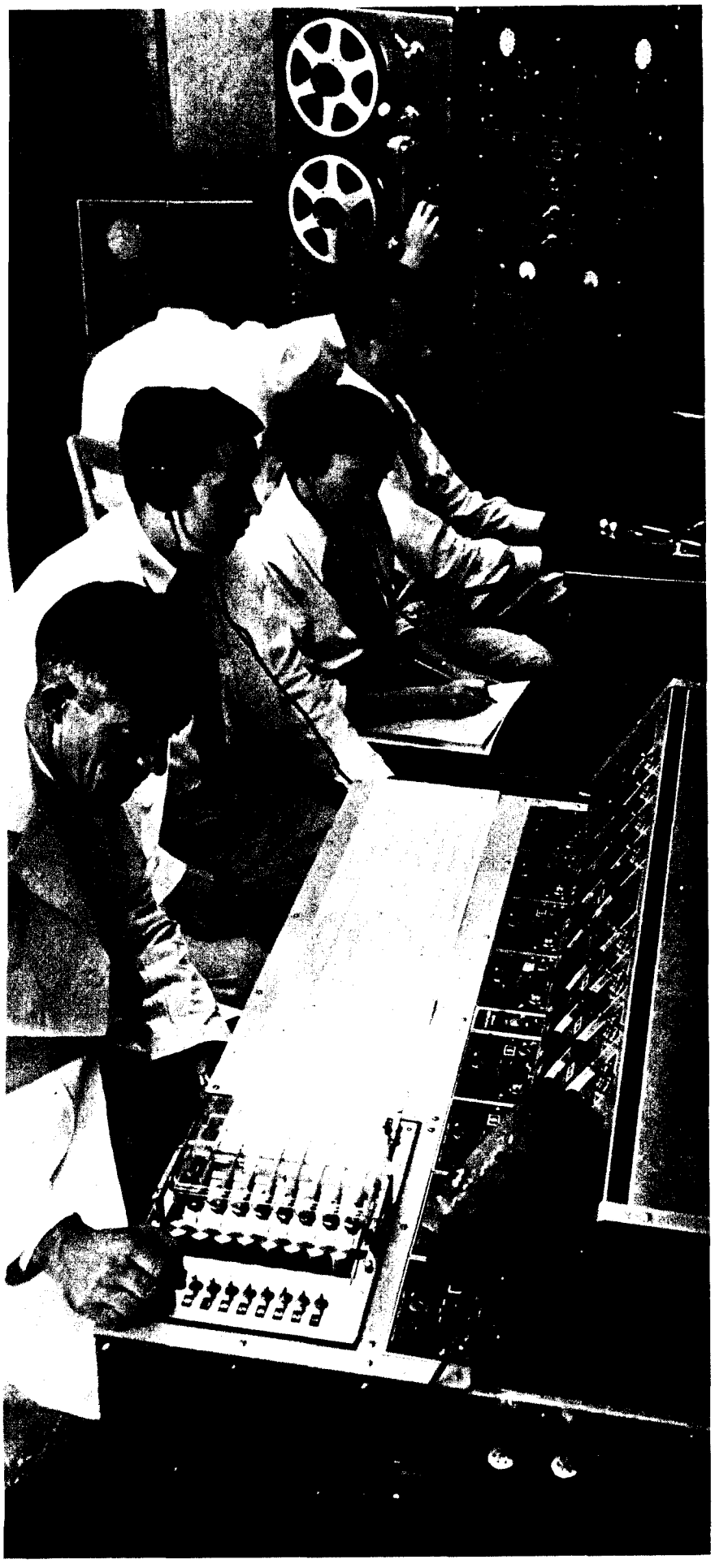
Whether attributable to the mother's behavior or something basically inherent in the child, difficulties in this first relationship with another person are basic and affect the individual's other relationships throughout life. Many doctors also believe that, associated with the psychological factors in schizophrenia, there is a physical-organic factor, with actual impairment of the nervous system.

If the victim gets no help, the disease progresses and his personality deteriorates. With help, many people may be rescued from life in a mental hospital; their energies can be redirected and the problems with which they cannot cope removed.

Until recently, there were only three principal treatments for schizophrenia: insulin therapy, electroconvulsive (shock) therapy, and various forms of brain surgery. All three have been successful, but not all with the same people and not all to the same degree. Often, in combination, they have arrested the disease for varying lengths of time, sometimes permanently.

Despite these heartening advances, however, it was still true that for every schizophrenic who could

PHOTOGRAPHED FOR COLLIER'S BY ALFRED GESCHEIDT



Tulane School of Medicine researchers in control room regulate electrical stimulation delivered to a patient through wires embedded in his brain (see opposite page)

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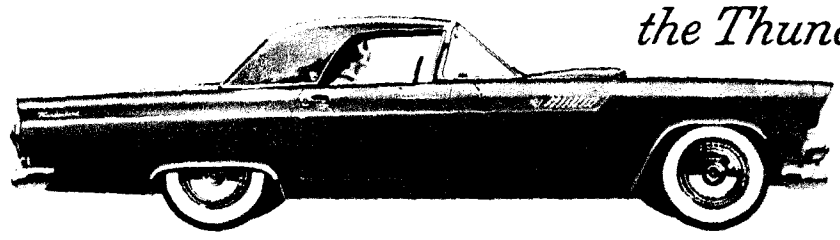

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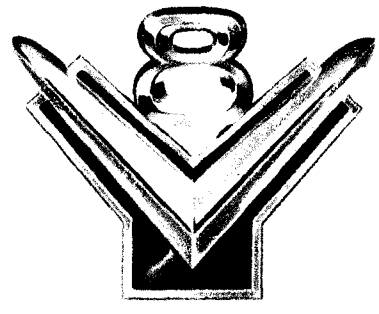

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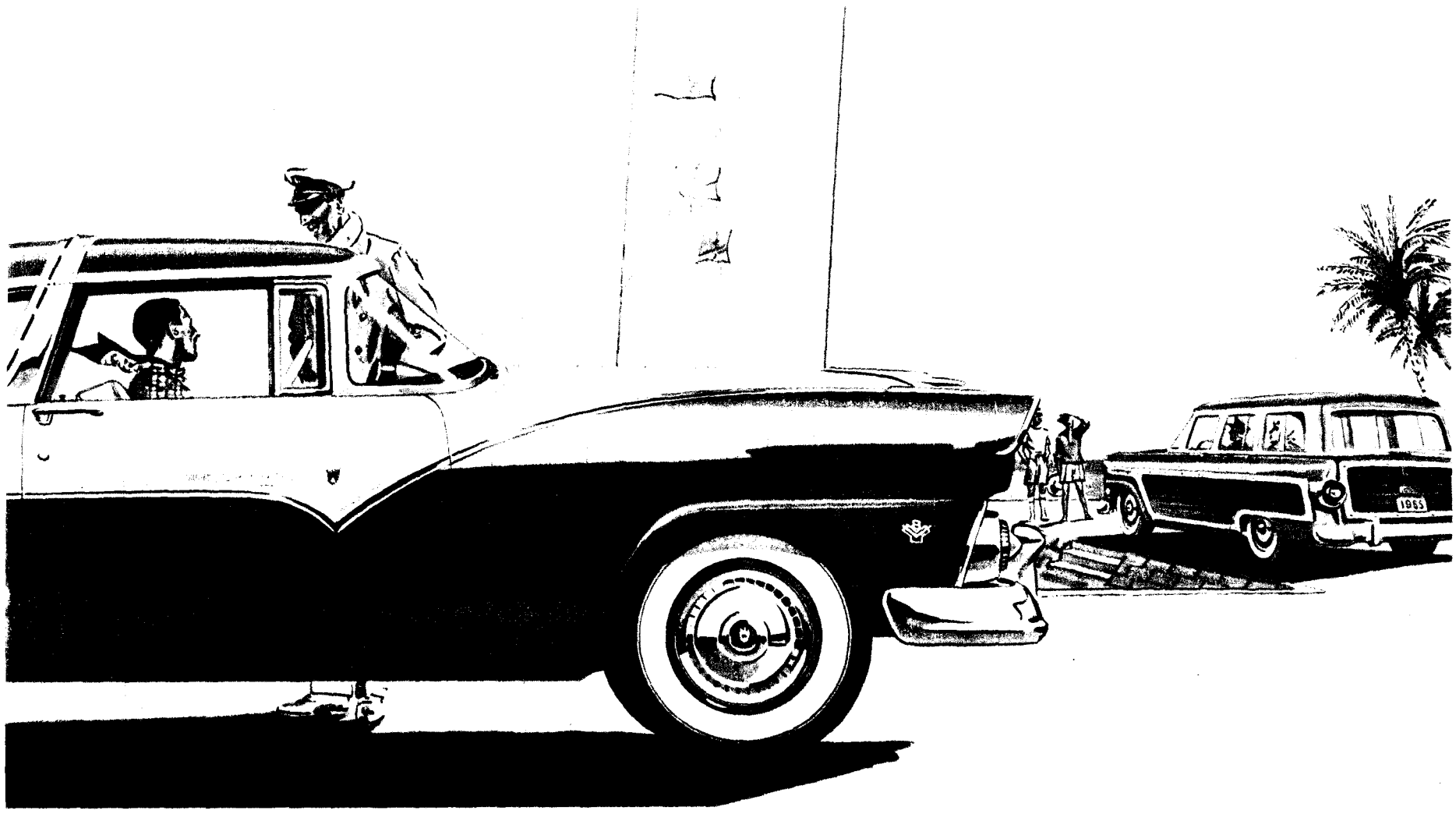

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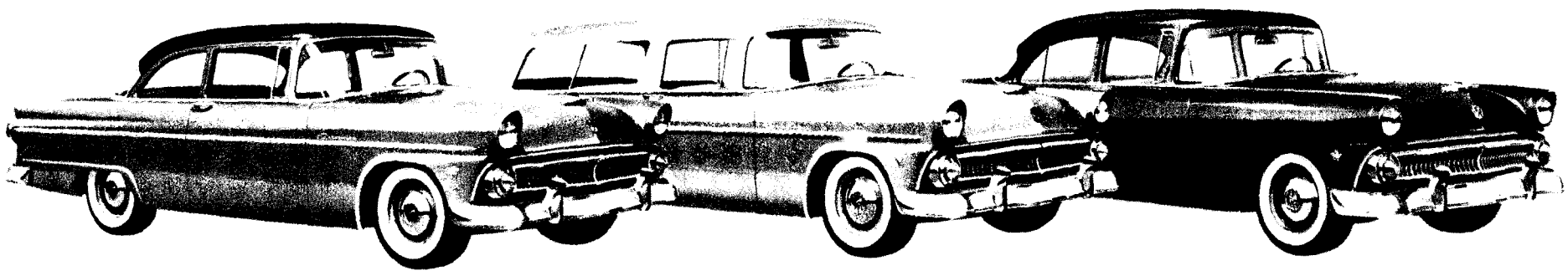

Customline Series. The Tudor Sedan (shown above) and the Fordor Sedan, like all '55 Ford models, have a new wider grille, new visored headlights and sturdier, extra-narrow pillar-posts for better visibility.

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'55 FORD

In one successful case, a teen-aged schizophreni

resume his place in society, many had to remain institutionalized, largely without hope. For these people, especially, the new techniques developed at Tulane hold promise.

In the Tulane operation, small holes are bored in the forepart of the skull. Through these, fine copper wires with silver ball electrodes at their tip are implanted in whatever part of the brain has been selected by the doctor for exploration. The wires are brought through the skin and soldered to an electrical outlet which rests on the head. This arrangement makes it possible to administer, as desired, a series of electrical stimulations of the brain area under study; it also makes possible the follow-up study of electrical recordings made.

The electrodes cause no discomfort to the patient, no extensive damage to brain tissue, and they do not interfere with the functioning of the brain. They can safely be left in place for many months. At intervals the doctors apply electrical stimulations, regulating them so that the patient's reactions can be charted and evaluated. Unlike electroconvulsive therapy, the stimulation sessions are neither violent nor disturbing to the patient. No more than four to eight milliamperes of electricity—the mildest of doses—are applied.

The Operation Is Not a Cure

This new attack upon schizophrenia was devised by Dr. Robert Galbraith Heath, forty-year-old head of Tulane's department of psychiatry and neurology, and a group of associates. Dr. Heath stresses that neither the operation nor postoperative stimulation is a cure for schizophrenia. "But," he told me, "a potent avenue for further investigation of the disease has been opened up. To date, the most significant and heartening result has been the extent to which our patients have been enabled to accept and benefit by other therapies—some of which had failed previously. Let me repeat, this operation is *not* a cure. But our results do warrant calling it a factor in retarding the disease.

"Schizophrenia is a highly complex disease," Dr. Heath went on. "Although it is a mental ailment, it is not of the mind alone. Mental activity is a reflection of activity of the central nervous system, and the nervous system is also the central integrator of all bodily functions. In looking for its causes and cure, we must attack it not from one direction, but from many—not just the mental aspects of the disease, but the cellular, chemical and endocrine structure as well. That's what we're doing here at Tulane. We have brought together scientists from many fields who, because of their special interests and abilities, are equipped to play a role in this fight."

Dr. Heath's team is impressive. It includes an internist, neurosurgeon, neurologist, physiologist, pathologist, psychiatrist, psychoanalyst, psychologist, radio and electronics engineers, biochemist, medical technician, social worker and nurse. I saw some of them in action when Dr. Heath invited me to sit in on a stimulation session—a rare opportunity for a layman.

The session began early in the morning in what resembled a small radio studio. It consisted of two rooms—an inner treatment room where the patient was to sit and be interviewed by his doctor, and an outer control room, in which were set up a number of delicate and intricate machines specifically constructed to control the stimulation, measure the amount of voltage being applied, and assess its effects. An amplifier and a glass wall separating the two rooms permitted those in the control room to see and hear the results of the stimulation.

As I walked into the control room, a young psychiatrist interested in electronics was discussing a machine with its engineer. A visiting doctor conversed with a secretary, who was sitting ready with her notebook and pencil to take down what the doctor and patient said to each other during the stimulation. Nurses and interns in starched white sat quietly waiting; they were student observers.

Then a wheel chair creaked. The patient was being brought in. He was a man of about thirty-five, clad in hospital pajamas and bathrobe. His head was covered by a white cap made of stockinet. Through an aperture in the cap wires protruded.

The patient's face was strained; his eyes, behind horn-rimmed glasses, seemed troubled and weary. He sat rigidly, but some of his stiffness was dissipated by the warmth with which he was greeted.

"Hi, Bill," a young doctor called out.

Bill responded with a half smile and a lift of a hand. "How's she working?" he asked the engineer as he was wheeled past one of the machines.

The engineer took off his earphones: "Couldn't be better."

The ward attendant who had pushed Bill in took the wheel chair away, and the patient settled himself in a comfortable chair in the inner room, facing his doctor across a desk. They chatted quietly while the wires from the stimulation machine were connected with those protruding from the patient's cap.

A Checkup in the Control Room

At this point Dr. Heath strode into the control room. He spoke to the engineer, frowned for a moment over the device that would record Bill's brain waves, then briefly stepped into the treatment room.

The haste was gone from his manner as he talked reassuringly to Bill. He had a word for the doctor, too. Then, closing the door, he said, "Let's go," and the machine was turned on.

Bill's immediate reaction was that he began to talk faster. Whereas he had just been chatting casually about objects around him, he now seemed deeply troubled. He sighed heavily from time to time.

"How do you feel, Bill?" his doctor asked quietly. Bill rubbed one hand against the other, grimaced slightly, and moved his head around uncomfortably. "I feel hot, doc, hot and unhappy."

"What makes you unhappy, Bill?"

COLLIER'S "Must be someone from the S.P.C.A." MARY GIBSON

...as enabled to go back to school

"Oh, I keep thinking . . . remembering things I did . . . peeping in windows and things like that."

"And that makes you unhappy?"

The patient put his head on his arms and moaned. "I remember walking with my grandmother when I was just a little kid. There's something about that that makes me feel terrible."

The doctor leaned forward eagerly —we all did—but his tone remained quiet and reassuring. "What about that walk made you feel terrible, Bill?" he asked.

"I don't know; it's like a picture of something that happened." Bill's words were slow, his voice taut and agonized. "This picture . . . it makes me feel bad . . . I can almost see it."

We all tensed with Bill's doctor. If Bill could see that picture which so distressed him, if he could bring that early experience into the light, his confusion and terror might begin to lift. But he slumped back with a sound like a whimper. "Can't remember, doc. I can't see the picture."

No disappointment showed in the doctor's voice. "That's all right, Bill; next time, maybe."

The entire session went along in this tenor, as Bill's words hinted at feelings of fear and guilt about his relationship with his grandmother and about sex irregularities. Even though the patient could not recall the key traumatic incident, he had furnished his therapist with valuable material to work on, and the record of his brain waves, taken in the control room, would later show those who studied it at what points in the treatment there had been any unusual cerebral activity.

The session lasted nearly two hours. The length of a treatment, as well as the amount of voltage applied, varies according to a patient's reaction; it may last anywhere from an hour to two hours and a half.

Effects Vary in Many Patients

After Bill had been returned to his ward, seemingly little affected by the stimulation, Dr. Heath told me: "To date we have operated on more than half a hundred schizophrenics, men and women ranging in age from seventeen to sixty. In all of them the disease had reached a serious stage; none had responded to any other therapy.

"The results of stimulation have varied widely with different patients. In some cases we found changes in the body's cellular, chemical and endocrine elements, but no appreciable change in behavior. But in most cases there *was* a change in behavior and personality as well. An awakened quality was evidenced. Some who had not spoken at all began to talk—to me, to other doctors, to the nurses and ward attendants, even to other patients. Some who had spent most of their time immobile or in bed began to move around and take an interest in things around them. What was especially encouraging, some of them began to assume responsibility for their own cleanliness and ward routines, and showed a willingness to take part in hospital activities."

Dr. Heath turned me over to a young assistant, Dr. Arthur W. Epstein. "I want Dr. Epstein to tell you about Jane," Dr. Heath told me. "He was Jane's doctor, and her story is the story of thousands of young people."

We settled in Dr. Epstein's office, just big enough for a desk and chair, and he took up the story Dr. Heath had begun.

"Jane was one of the first schizophrenics we operated on here at Tulane. She was only seventeen when we first saw her. She was shockingly emaciated—weighed only 59 pounds. She alternated between refusing to talk at all and conversing in a silly fashion, accompanied by abrupt body movements and facial grimaces. She told us that she was afraid of 'voices' that kept accusing her of sexual sins."

Early Signs of the Disease

Jane's father was a farmer and very quiet, her mother deeply religious, stern and authoritative—very much head of the house. Jane was normally intelligent, although she had never used her mentality to capacity. She had always been shy and submissive. From the time she was a small child her mother had considered her "different," the least attractive of her four children. Jane didn't talk until she was past four; she continued to suck her thumb until she was ten. Her school marks were poor, not because she could not have learned, but because schizophrenia was already asserting itself and she was withdrawing from the world. Finally she left school in the ninth grade, when she was sixteen.

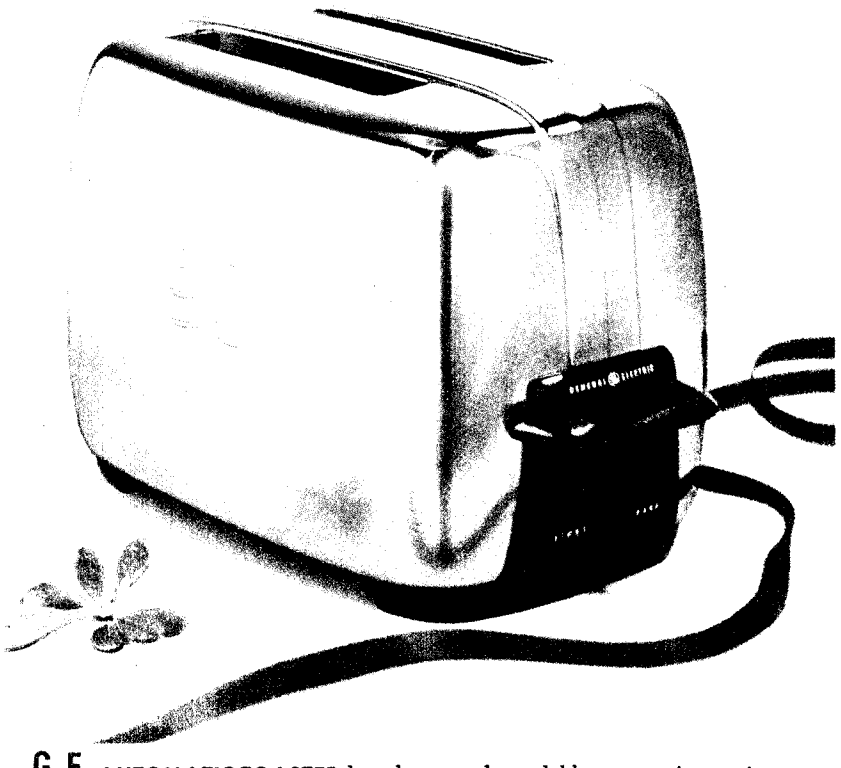
"Her family told us that Jane's behavior had always been queer," Dr. Epstein went on. "But about two years before she came to us here her symptoms got so serious that even the family could no longer ignore them. She refused to eat—sometimes for a week at a time. She became more and more silent, and avoided the slightest contact with people whenever she could. Sometimes, after great urging, she would help her mother with housework—not often, however, for Jane's hostility toward her mother grew greater as she tried to force her to eat. Eventually she became so emaciated from malnutrition that she had to be brought to the hospital.

"After her admittance we gave Jane electroconvulsive treatments, but they made practically no change in her condition. She was physically inert and very phlegmatic in her attitude toward us and the other people in the hospital. Finally we decided to operate on her and use the stimulation technique."

"How did she respond?" I asked.

"At first, only physically. Just 12 days after the operation, she was more active than I had ever seen her. She left her room without urging, moved freely around the ward, ate enthusiastically. She began to gain weight, and that pleased her greatly. By the second week after the operation, she was chatting with the other patients and obviously enjoying herself. She talked freely with me, too, but at times still expressed feelings of guilt and unworthiness about herself. She would say, 'I don't think I should get well, I don't deserve it.' Often her feelings about herself were mixed: 'I don't know how I should feel—sad or happy!'

"The best proof of the success of the operation and stimulation technique was the way she was able to respond to psychotherapy. Together we were able to bring to the surface and deal with



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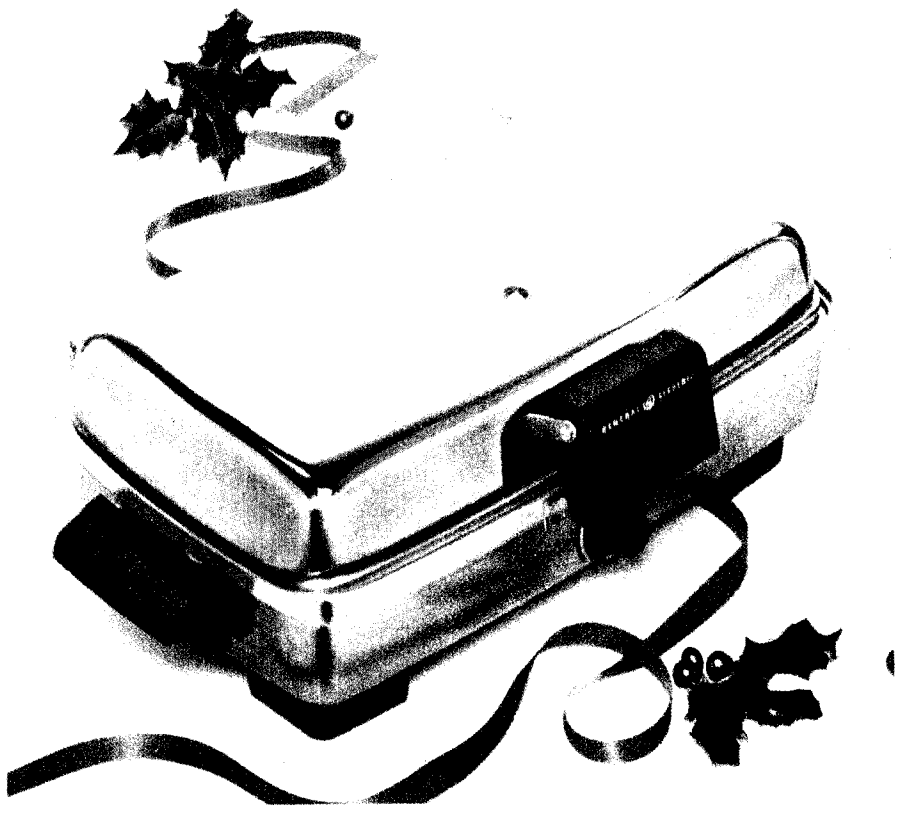

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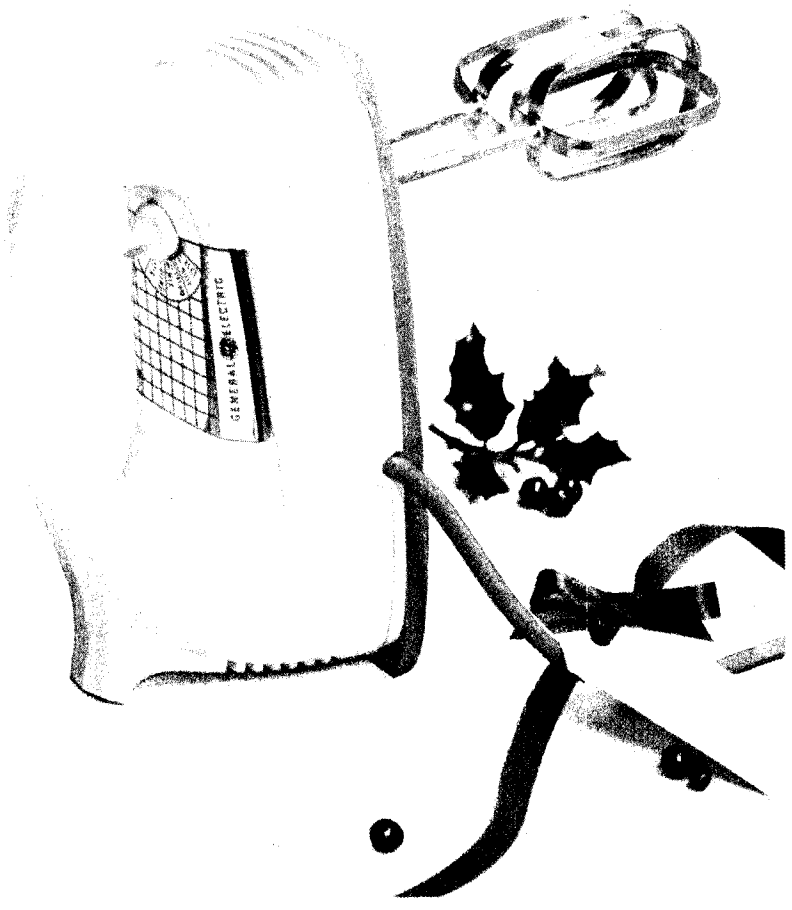

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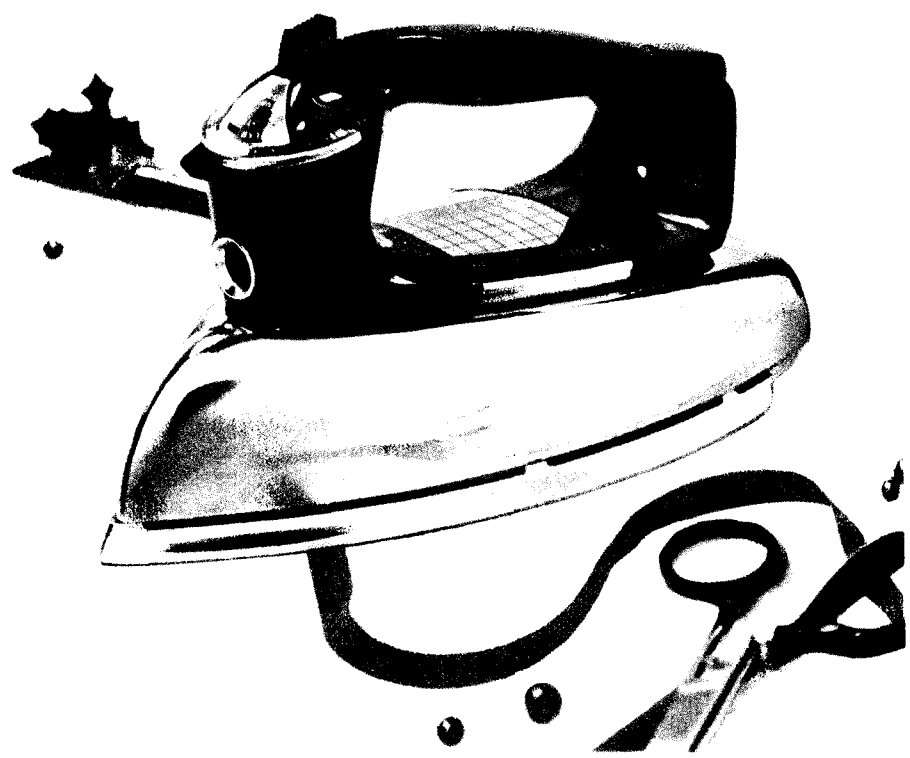

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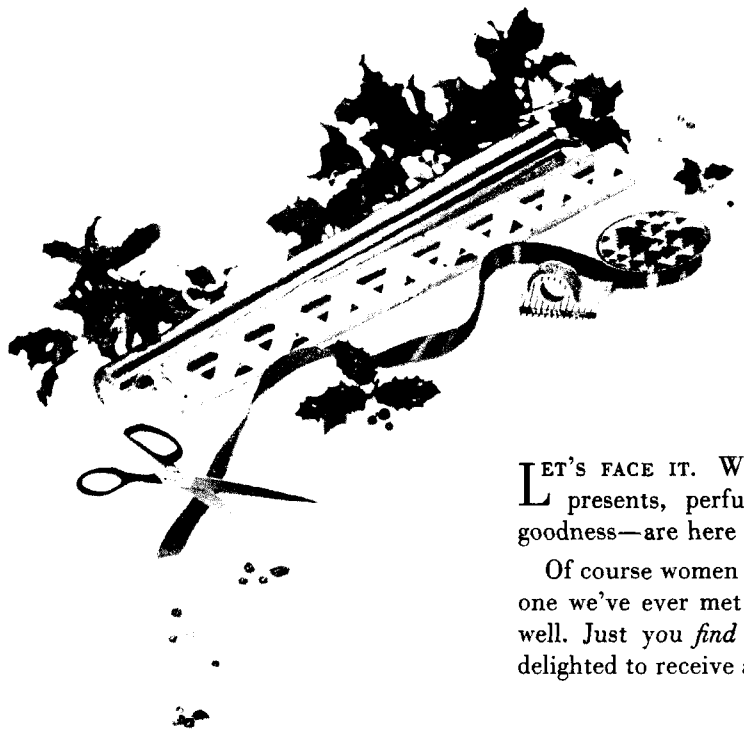

Wrap up your gift problems right on these pages!

LET'S FACE IT. When it comes to Christmas presents, perfumes and negligees — thank goodness—are here to stay.

Of course women love "frilly" gifts! But every one we've ever met has a very practical side as well. Just you *find* us a girl who wouldn't be delighted to receive any of the handsome, as well as useful, gifts shown here on these two pages!

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some problems which had been buried deep within her since childhood—the problems that had caused her intense feelings of guilt. She began to see herself in a new light—discovered capacities in herself she had not known she possessed. She found she could reach out to other people and take part in life without fear."

During the next two months, Dr. Epstein said, Jane was even able to encourage some of the sicker patients. As she helped others, she began to have fewer deprecatory ideas about herself, and the "voices" stopped plaguing her. Then she began leaving the hospital for lunch or a trip to the movies. A few weeks later, she made her first trip home.

For every patient, the first trip home is a critical test. "We planned carefully for Jane's visit," Dr. Epstein said. "One of the social workers and I had long talks in advance with her family, especially her mother. I could not change her basic attitudes, but I was able to make her see that Jane had to have the love and approval she had lacked all her life. I made as sure as possible that her family would encourage every social effort she made, and keep the home atmosphere free of tension.

"Our concerted efforts made Jane's visit home an overwhelming success and a turning point in her illness. Her family and friends were all amazed at her changed looks and behavior and at the fact that she was friendlier and more cheerful than they'd ever seen her.

"Jane kept on improving. Only four months after the operation, she was discharged from the hospital in good physical health and eager to do things it would never before have occurred to her to try."

New Interests and Activities

At home, Jane continued to eat well. Six months after the operation, she weighed 116 pounds. She made new friends and even learned to drive a car. She returned to school, entered into studying with enthusiasm and did well. Though she lived on a farm out of town, she took part in many extra-curricular activities.

"It's more than two years now since Jane's operation," Dr. Epstein said, "and she has not only held her own but has realized many of her hidden potentialities. I continue to see her periodically and I see no reason to believe that the disease will not continue to be arrested and that Jane will not live a long, happy and satisfying life."

To a question I posed later, Dr. Heath frankly replied: "We don't know *why* Jane recovered. We only know that what happened to her can happen and is happening to others. Her case has given us a new body of knowledge to study, just as every operation has produced material for every scientist engaged in this fight. The gains we make in the years ahead will be because Danny and Bill and Jane taught us things we did not know before."

The Tulane operation, although designed primarily to study schizophrenia and find more exact and less damaging operative procedures, has had some dramatic and unexpected side results. Some patients operated upon had physical ailments as well as schizophrenia. For several suffering intractable pain from terminal cancer and tuberculosis, the stimulation which followed the operation acted as a pain deterrent.

One elderly man had spent many years in a wheel chair, helpless from rheumatoid arthritis. One knee was swollen to a grotesque mass. Under stimulation, the swelling receded along with the pain, and the patient was able to walk about by himself and climb unaided on and off wooden blocks.

Breaking an Eight-Year Silence

Another schizophrenic who had not spoken for eight years was brought in suffering from advanced inoperable cancer of the breast. The electrodes were implanted in her brain. Under stimulation, she began to talk. Moreover, she was obviously relieved of intractable pain and was able to express her gratitude.

Dr. Heath and his associates do not know why these results occurred, but they are planning to test further the theories which seem worthy of pursuit.

Can we laymen do anything about schizophrenia? Very definitely, the Tulane doctors feel. Because its early detection offers the best chance for retarding the disease, they say that we all ought to learn to recognize its symptoms.

One of the first to appear may be extreme preoccupation, coupled with an aloof, superior air which makes the victim seem "high hat." He concentrates on himself, showing little concern for what goes on among other people or in the world. He seems emotionless and lacking in compassion.

Next, what at first seems only a lack of interest turns into suspicion of other people, then active hostility. Delusions and hallucinations develop; the victim may be plagued by "voices" accusing him of sex offenses or other crimes. He may refuse food and become careless about his personal habits. He may imagine that he has physical ailments, or direct his hostility toward the organs of his own body, like the patient who had to be restrained from gouging out her eardrums to still the "voices" she heard.

In further flight from the real world, the schizophrenic may deny his own identity and substitute another, usually related to some of his repressed desires. He may talk and write a high-flown jargon, using words he makes up. At last he distorts the world to conform to his own fantasies; he can no longer tell the difference between fact and fancy.

Because schizophrenia chiefly attacks the young, Dr. Heath believes that parents can be medicine's best ally. "To be vigilant about spotting the disease," he says, "may mean changing some of our ideas about child behavior. Mothers and fathers must learn to look twice at the child who is 'seen but not heard,' and to be concerned about the youngster who buries himself in books to the exclusion of playmates.

"Your eardrums may take a beating, but count yourself lucky if the neighborhood gang whoops it up in your house. Be glad if your child loves everybody and wants to be loved in return. Give him that love; it's as essential to him as the food you provide. Build up his belief in himself.

"This is one fight we can all get into —and for the best of all reasons, self-interest. More hospital beds today are occupied by patients with schizophrenia than with any other illness. But modern research offers hope. If everyone gets behind the fight, and if funds are made available for vitally needed further research, we may yet defeat this implacable disease." ▲▲▲

Hard Day at the Office

By BERBRAM