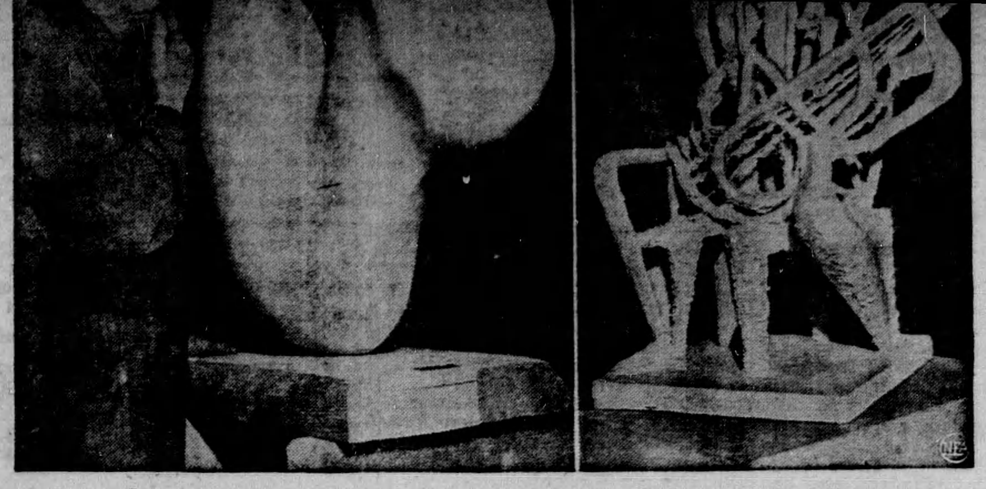
education is essential for permanent results, states Homer N. Calver in an article—"The Thumb in the Soup"—in the current issue of HEALTH, official magazine of the Health League of Canada.

He states that three groups must be reached by this education: (1) the people who own and operate our public eating places, (2) those who work in them, and (3) those who eat there.

Pure and undeteriorated food, protected from spoilage and infection served by non-infectious personnel with clean habits and in clean eating and drinking utensils are the public health requirement for eating and drinking places, Mr. Calver writes. Good light good ventilation and generally clean surroundings are most desirable attributes of any food handling establishment, but in the last analysis they have little direct bearing upon disease. Good equipment and proper supplies are useful in purveying a non-dangerous food, but they are not essential.

"Stainless steel does not prevent the thumb in the soup," says Mr. Claver. "Many a lipstick-smeared glass emerges from inexpertly operated modern dishwashing equipment. The little ways in which foodhandlers work can have more effect on health than the most elaborate things they work with."

The author remarks that a channel of infection runs from person to person via the things we eat and drink and the things we eat and drink from and with. The undisinfected glass can carry the bacteria and viruses of trench mouth, measles, influenza, scarlet fever and the common cold from mouth to mouth. The unwashed hands of a cook can spread typhoid and dysentery. The sore on the finger of a kindly member of the Ladies' Aid Society can poison the chicken salad for the church supper.



This Is High Art—Maybe—A bit puzzled? Well, so is Adolphe Landru, French worker at left. He doesn't know whether that sculpture is a bird, an eye, a wheel, or what. It's one of the many modern paintings and sculpture pieces on display at the 16th art exhibition of the Society of Independent Artists in Paris. Another head-scratcher in the show is the surrealistic figure called "Musician," right.

25,000 M.P.H. No Pipe Dream

By S. Burton Heath

This may sound like somebody's pipe dream—but:

Solemn scientists and engineers actually are talking about the possibility of man-carrying airplanes that will fly at 25,000 miles an hour planes that could go outside the earth's atmosphere, where no air friction would slow their speed, that could circle the earth at such speed their centrifugal force would offset the pull of gravity.

Out in sub-stellar regions, somewhere between here and the moon, the engineer could cut his engines. Then plane and crew could circle the earth forever—or, at least, until they got hungry and lonely and bored—without using any power.

When their job was done, or the crew members couldn't tolerate one another any longer, the engineer could start his engines, and the plane could fly back to where gravity took control. From there on the trip back to earth could be a coast-in.

"There are lots of things to be licked before we could do that," remarks Robert D. Grange, project engineer in the Wright Aeronautical Corp.'s gas turbine division, "but there's nothing that says it's impossible."

The experts do not flirt with such ideas out of idle curiosity, or even to provide future escape for folks who get fed up with human society. The military thinks such a "space ship" would be a valuable weapon.

It could hang in the sky, overlooking a full half of the earth's surface at once. With electronic devices, the crew could take control over atomic missiles, launched from the earth, and guide them unerringly to explode in the Times Square, the Wall Street, the Pennsylvania Avenue, the Willow Run of any enemy country that was no more than half a world away.

Obviously, nothing like this is just around the corner. But the rocket engine, perhaps even more than the possibility of atomic power, makes it an idea from which scientists of substance do not turn scornfully away.

Ignoring atomic power for the time being, the rocket engine is the only power plant that might make such a venture conceivable. For one thing, only the rocket engine could provide speeds from 23,000 to 25,000 miles an hour necessary to break through the earth's gravitational pull, so that the ship could coast along through space.

For another, engines and turbines and jets need air, as a source of oxygen to support combustion. But the rocket engine carries its own oxygen supply, and it alone can operate above the 80,000-to-100,000 foot level at which the earth's atmosphere becomes too thin to support combustion efficiently.

There are several obvious major problems in connection with such a space ship. They start with the designing of a plane capable of building up, in a few hundred miles, to a speed of 25,000 miles an hour.

The cabin would have to stand a pressure of 14.7 pounds to the square inch, inside, against no pressure at all, outside, without exploding. Insulation would be needed against heat generated by air friction while moving 25,000 miles an hour in the earth's atmosphere; and also against the fact that in space there would be no atmosphere to temper the sun't heat by day or to hold and distribute remnants of that heat by night.

In the absence of gravity's pull, there would be nothing to hold down the crew, or anything else that was loose.

The rocket engine still is in its infancy. It has been used on experimental fighter planes chiefly because, at the time, no turbo-jets powerful enough were available. Its principal immediate interest is in connection with missiles of the V-2 type. It has helped to achieve manned-plane speeds unofficially estimated to have approached 1700 miles an hour — unmanned missile speeds up to about 4000 miles an hour.

It has at least one major defect thus far. Its fuel consumption is so enormous that a rocket-powered plane can stay in the air only a few minutes.

The name "rocket" is deceiving. Its power does not come from a series of explosions from rockets, but from the continuous burning of a mixture of ethyl alcohol and liquid oxygen at a temperature around 5000 degrees fahrenheit.

The rocket engine actually is another jet engine that carries its own oxidizer instead of depending on the air. Like any jet it expels high pressure, super-heated gases from a rear nozzle, and these kick the plane along with the same reaction a heavy gauge shotgun applies to the hunter's aching shoulder.

Very secret work is being done on new propellants to replace ethyl alcohols and liquid oxygen. Most are very poisonous and highly corrosive. Some will ignite with explosive suddenness the instant they come together, which creates a hazard to experimenters and adds to the problem of finding new materials to contain and utilize them.

The rocket engine can operate at any speed, but—unless working beyond the atmosphere at 16 to 20 mile altitudes—there is no excuse for using it until speeds from 2000 miles up are required.

Any use at lower speeds, now that turbo-jet and ram-jet are available, is not because of the rocket's own virtues, but merely to permit study and experiment with rockets before really speedy planes become available.

Merry Menagerie—By Walt Disney

"You'll have to give me a push, dear—I'm getting awful hard to start, these cold mornings!"

SHORT STORY

The Last Cry

By NORMAN FREILICH

He stood outside his uncle's room, and as he listened for a brief moment to the labored breathing coming from within, his features became distorted by some sinister emotion. For the physical wreck within the room, his uncle stood between him and his inheritance. Only upon Jason Stonleigh's death would he come into his estate, and only yesterday he learned from Doctor Phelps, his uncle's physician, that old Jason would perhaps live for years. It was then he had made his decision.

Alex clenched his fists as he thought how simple it would be to strangle the life out of the old man —but there was an easier way, one which would never throw an inkling of suspicion his way. His uncle kept a loaded gun in his room, eccentric as he was, he lived in fear of his life. He kept only one servant, who would be away today, and there would be a way today.

Alex smiled to himself, deeply satisfied with his plan, as he entered the room. He greeted his uncle with robust good cheer, but his uncle, a dark scowl upon his thin bony face, sat in his chair silently. There was no movement in his body.

"Aren't you feeling any better?" he asked with feigned concern, and then the eyes of the two men met, and their glance seemed to sweep aside all pretense between them.

"It's been a long wait, hasn't it, Alex," the old man said with biting contempt, "but I'm afraid it will even be longer. Doctor Phelps has been quite encouraging.'

Alex edged toward the desk in which the gun would be. He opened the drawer, felt the brittle coldness of steel. He swept about to Jason Stoneleigh, and the gun was in his hand. "You miserable wretch," he slurred, "I won't have to wait a day longer."

The old man's eyes stared wide with terror. His body did not rise from his seat as though he might be frozen with fear. There was only a pitiful cry: "You'll hang for it, Alex!"

A moment later, with detached calm, Alex wiped the gun clean of his own fingerprints, and then placed the weapon in the murdered man's hand. He tookone last glance about the room assuring himself there was no trace of evidence.

He was sleeping soundly that night, happy in the thought that in the morning he would be a wealthy man. But it was almost midnight when he was awakened by the polce. He was ordered to get into his clothes at once.

"But I don't understand," he protested, his face white and drawn. Then he succeeded in controlling his fears, realizing, of course, that this would be only a routine investigation. Surely nothing could have gone wrong. He hastened into his clothes.

The police drove him to the house of his uncle. It seemed all of them were awaiting him—the state's attorney men, Jason's servant—and in the background—Doctor Phelps.

"I'm here to give you gentlemen every help," he said, gravely, and the sound of his voice gave him sudden courage. "I'm terribly upset to hear of my uncle's suicide."

"Suicide? You're certain It was suicide?" the question was hurled roughly at him.

Panic gripped hmi, and his eyes turned desperately to Doctor Phelps. "Surely, Doctor Phelps, you can tell them how absurd it is to think

Panic gripped him and his eyes, wild with sudden fear, turned desperately to Doctor Phelps.

otherwise. You can't tell them of my uncle's brooding over his ill-health."

The doctor stepped toward Alex, his face stern, almost menacing. "I can only tell them the truth, Alex—"

"Yes, the truth," Alex pleaded.

"Your uncle suffered a stroke a week ago—and the gun which killed Jason Stoneleigh was found in his right hand"—the doctor paused—"and that hand and the whole arm were paralyzed."

Smart Manager

Circus man John Ringling kept an eagle eye on the purse strings. One day, says the Milwaukee Journal, a clown came to his office and asked for a $10 raise. Ringling looked at the man as if he had been struck a blow.

"Ten dollar raise!" he wailed. "I don't think the job is worth the $40 I'm paying you now!"

The clown didn't press the matter. He didn't think it would be good business at the moment to remind Ringling that his salary was $60. Deciding to leave well enough alone, he turned and left the office.

The moment the door closed behind him, Ringling leaned back and chuckled. Nobody knew better than he that the man was earning $60 a week. But he had taken the wind out of the other's sails.

Jack: "Well, did you succeed in making your girl's father toe the mark?"

Tom (sadly): "Yes, but, unfortunately, I was the mark."

According to a man who should know what he's talking about—he's F. K. Hare, assistant professor of geography at McGill—what has been acomplished out west, since the passing of the Prairie Farm Rehabilitation Act back in 1935, is a pattern which might well be applied to soil conservation throughout all Canada, including Ontario.

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By 1946, Professor Hare says, no less than 29,900 dams had been constructed, at a cost of twenty-two million dollars. That seems like a lot of money. It IS a lot of money, for that matter. But it seems small in comparison to the gross value of agricultural production in the prairies provinces which, in a normal year, is in excess of a billion dollars.

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Three things that have been accomplished are — soil saved from erosion; the wheat farmer in many areas is no longer completely dependent on that grain for his entire income since pastures have increased his possibilities of raising cattle; and a large scale irrigation and water-use program has been developed.

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A check-up made in 1946 showed that there were 1,361,000 acres of rehabilitated pasture land supporting 55,060 cattle, 11,920 horses and 3900 sheep. This pasturage is in fifty different units, and on most of them there are pedigreed bulls, provided under the act, to raise the general level of stock breeding.

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This good work out on the prairies hasn't stopped, by any means. As a matter of fact it is expected that projects under construction on the St. Mary's and Milk Rivers will more than treble the land available for cropping. With dust storms threatening many western areas this year, a lot of folks out that way are going to be mighty glad the Government took the step it did, 11 years ago.

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As I said before, it would seem that the folks up around Queens Park might well go in for something of the same sort on a far larger scale than is being done at present. Of course, in Ontario reforestation is being carried out in several localities, but it wasn't until after the Provincial Department of Planning and Development had uncovered a tale of erosion, land abandonment and uncontrolled flooding that was simply shocking.

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You folks who are in the poultry business hardly need me to tell you that uniformity of performance among hens is very often the exception rather than the rule. The performance of full sisters is apt to be almost as variable as that of unrelated females, and the progeny of one hen will differ among themselves as much as they do from the progeny of other hens.

This, of course, is a real handicap to the poultry raiser, and greatly slows up the improvement in a flock which should, theoretically, be possible by means of careful selection.

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Some of this variability is due to inherited differences; but the greater portion to the effects of climate, management, feeding and disease. Yet two groups of birds that are housed, fed and managed alike can differ more widely in performance than groups upon which different treatments have been deliberately imposed. So the experts have come to the conclusion that very minute differences—so small that they are not even recognizable — can have a profound effect on performance.

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The same experts say now that unsatisfactory incubation can be one of the more important causes of this lack of uniformity. The rate of egg production of a laying pullet can depend not only on the care she gets during her laying year, but also on the treatment she got during brooding and rearing—yes, even during incubation before she was hatched.

* * *

Here's a really striking example of what I'm talking about. At a Dominion experimental station out in British Columbia eggs from three sires were incubated up to the fourteenth day in a machine which habitually gives satisfactory performance. Then one half the eggs from each sire was transferred to another machine for completion of the hatch.

* * *

Temperatures in this second machine were at 100F for the top trays and 95F for the trays immediately below—these being the only two rows of trays used in the test. The chicks hatched from both machines were brooded and reared together, and carried through their first laying year in the same pens.

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So what happened? Well, from the good incubator 92 per cent of the pullets housed survived the year and averaged 229 eggs per bird. From the machine where half the eggs were at 95F temperature only 47 per cent survived and averaged a mere 187 eggs per bird.

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Now those are mightly big differences—too big to try and laugh off—and they indicate that unsatisfactory conditions of incubation can have a profound effect on the future performance of a pullet. And, says the Department of Agriculture at Ottawa, these facts place a heavy responsibility on hatcherymen, insofar as the quality not only of the chicks but also of the future laying stock is concerned. For it would seem that no amount of care during the brooding, rearing and laying period can nullify the effects of unsatisfactory conditions of incubation.

Royal Vacation for Princess—A dip in the blue waters off the Isle of Capri is in store for Princess Margaret Rose, as she steps in a rowboat on a private beach on the Italian isle. Helping the Princess aboard are her gentleman-in-waiting, Major Thomas Harvey (left) and a boatman. The photographers were not permitted within 500 yards of the scene.

JITTER

By Arthur Pointer