Surgery Not Like It Used To Be

Operations today are not like they were a century ago, when more than half the victims died of shock within a few hours. Many who survived succumbed later from gangrene, and ultimately only two in ten recovered. Of these, one usually ended up a permanent nervous wreck through pain and shock.

John of Gaddesden, who was physician to Edward II, in a book of advice to surgeons of his period, writes: "The requisites for a doctor are an ability to lie in a subtle manner, to show an outward honesty, and to kill with audacity." Chances of recovery were so slim that another surgeon wrote: "Let him (the patient) prepare his soule as a ready sacrifice to the Lard by earnest prayer; craving mercie and help unfainedlie."

Apart from strong drink there were no anaesthetics. And when a limb was amputated, the stump was thrust into boiling oil or roasted with red hot irons before bandages were tied on. Rabbits' fur mixed with aloes was sometimes applied to stop bleeding. No wonder gangrene followed!

How different today. Your family doctor lays the history of your case before the surgeon who is thus armed with every relevant detail about you. As he sterilizes his hands, eases them into rubber gloves and selects his instruments, he has before him a clear picture not only of your trouble but of any weaknesses you may have inherited.

You often hear it said: "Surgeons don't care. They're always cutting people up; they think about as much of you as a butcher does a joint."

Don't believe that. A butcher works with portions of lifeless carcase; a surgeon on a live, delicate instrument pulsating with life. No callous man, however skilled, ever became a successful surgeon.

When you're on the table the surgeon ceases to think of you as rich or poor; as successful or a failure. You are then his most important patient. He will use all his skill to make you well again. He works in the presence of assistants, nurses, an anaesthetist, and sometimes visiting doctors and students—all highly critical people. And now, for the first time, an operation has been televised!

How different from eighty years ago when the surgeon was usually a bewhiskered gentleman attired in a frock coat. He made no preparation except to exchange this for a blood-stained smock. Often he did not bother to wash his hands, worked with unboiled instruments, and while operating shook a mixture of germs and snuff from his beard all over the patient.

Today, not only the instruments sterilized, but masks, rubber boots and gloves are worn.

The three main risks of an operation are: sepsis, shock and loss of blood. Sepsis, or blood poisoning, is avoided partly by the precautions outlined. But doctors also found that wounds are difficult to heal if they remain open too long. So rapid—not careless—operating is the result.

Dr. Lawrence, proved by experiment that much time is lost in reaching for and handing back instruments. He designed special tables which enable the surgeon's hands to fall easily on the instruments needed. Surgeons also spend many hours "operating" on lumps of beef wrapped in silk, using either hand to make rapid, accurate incisions, and have found that by this method not only has operating time been reduced by more than a third, but that their patients heal more rapidly.

Where loss of blood is unavoidable, it is countered by transfusion, and hospitals maintain stocks of every type of blood. A great advance, too, is the radio knife which ensures virtually bloodless surgery. Attached to one end is a current-carrying cable. As the blade severs, the nerve ends are "cooked" and automatically sterilized; the natural proteins are clotted and dried. The radio knife reduces bleeding to a minimum.

There are two kinds of shock: mental and physical. The surgeon does all he can to minimize physical shock. And mental shock is almost a thing of the past. The patient is wheeled into the anaesthetic room where an expert, while conversing naturally to him, gives him a gentle jab in the upper arm and sends him off to sleep.

He sees nothing of knives or fearsome instruments when wheeled into the operating theatre, where the anaesthetist administers a further dose of suitable anaethetic, sufficient to keep him under for the entire operation—possibly a small affair lasting minutes, or a brain operation which sometimes takes eight hours. The patient knows nothing about it. He wakes to find himself back in bed.

Few people realize how deft a surgeon is with his fingers. He not only cuts with accuracy, but sutures (sews) with skill. He is far removed from the ordinary hamfisted male trying to sew on a button.

Needlework is part of his training and despite the rubber gloves that encase his hands, he is an artist with silk, thread, nylon, catgut, fine wire, stainless steel and platinum. He must sew flesh, or fat which does not hold stitches easily. He must knit bones. He must sew speedily and tie knots with his gloved left hand, or with two pairs of forceps. Inside the body space is restricted and often he cannot see what he does. He works then by that extra sense which all good surgeons develop.

To ensure your comfort and safety surgeons spend endless hours sewing—in gloved hands—handkerchiefs together. They practise tying knots with the left hand, and with instruments.

If ever you are in hospital, take a good look at the surgeon's long, strong—seldom pointed—sensitive fingers, which do their bit—every bit as much as his brain—to bring you back to health.

Every surgeon must be able to do the glover's stitch, running stitch, mattress and cobbler stitches, hidden stitches for facial surgery, stitches that go over one edge and under the other, and sutures that look like the stitches on a quilt.

The cutting out of diseased organs; the stitching up of lacerated walls—these are only part of the surgeon's many problems. His job begins when your family doctor interviews him. It ends only when you are fit again.

Pigeons That Play Tunes, Ping-Pong, Match Colors And Count Off Seconds

If Dr. B. F. Skinner of Harvard will let you into his psychological laboratory, you will find some pigeons playing ping-pong, as likely as not, or pecking out on a seven-keyed piano such simple tunes as "Over the Fence Is Out, Boys" and "Take Me Out to the Ball Game." The pigeons know no more about music than the trained circus seals that manage to blow a few bars of "My Country 'Tis of Thee" on a specially constructed mouth organ to recceive a fish as a reward.

The pigeons are used by Dr. Skinner to find out the role of reward or punishment in performing tasks. It may be that when he has proceeded far enough, Dr. Skinner will know whether or not, for example, a child can be trained more effectively by encouraging good behavior or by punishing misbehavior, writes Waldemar Kaempffert in the New York Times.

So far as the experiments have gone it seems that reward is more effective than punishment. To test this tentative conclusion, Dr. Skinner has taught his pigeons not only to work for food, but also to cooperate in matching colors and playing ping-pong.

Pigeons and Humans

All this is mere classroom work for the benefit of students. Dr. Skinner's real purpose is to discover new ways of studying human behavior in various situations.

Pigeons turn out to be ideal subjects, because they live as long as fifteen years (rats only two or three years), because they have a reaction time comparable to that of human beings, because they have good color vision and, lastly, because they are less susceptible to disease than most laboratory animals.

In all of Dr. Skinner's experiments, the purpose is to persuade a pigeon to earn a reward for doing something. The reward is always a chance to peck at a bit of food for a few seconds. In some experiments, pigeons must learn to co-operate or to compete to win the privilege of pecking at the food.

A pigeon behaves very much like a small boy who is promised ten cents if he cleans up the back yard. When they learn that reward follows incentive and performance, pigeons will work their heads off. One pigeon pecked away over 35,000 times in five hours for one-third of an ounce of food.

To teach the advantage of co-operation in obtaining food, Dr. Skinner pputs his pigeons in a box with a glass partition in the middle. A pigeon is placed on each side of the glass. At the rear of the box is a panel with three pairs of buttons in a vertical row, one row on either side of the glass partition.

To receive food both pigeons must simultaneously strike matching buttons in the separated cages. When this is done, a light flashes, a buzzer sounds and the door to the food chute opens. Only one pair of food-producing buttons will work each time, but the two birds have little difficulty in exploring the pairs together and selecting the correct pair.

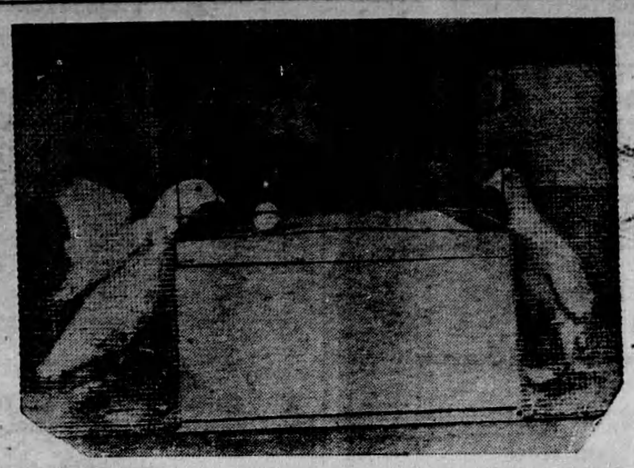
Colors Distinguished

A small brown and yellow pigeon has demonstrated that pigeons can distinguish colors. In this case the apparatus is a semi-circular cage with bulbs in a box at the top to project a green, blue, red or yellow light. The bird faces four small squares on which are printed "YELLOW," "GREEN," "BLUE" and "RED" When a red light is turned on in the box, the bird will peck at the sign which reads "RED", whereupon the food door at the bottom of the panel opens and he is rewarded with a bit of grain. Another light then automatically glows. If it is blue, the "BLUE" sign receives a peck. Properly trained birds are able to peck at the pertinent sign as fast as the lights are turned on. So it is with playing a tune on a piano of seven keys.

Pigeons can also be taught to compete. For this purpose Dr. Skinner has them play a modified game of ping-pong. The court is about two feet square and it has no net. One pigeon tries to bat the ball with his beak past his opponent. Rallies sometimes go to three or four shots but most of the shots are "aces." The winner is rewarded with food after each shot.

Pigeons in some experiments develop an ability to "tell time." If an apparatus will pay off only ten seconds after a signal they learn to wait, killing time by turning around once or twice, hopping from one foot to another, or pecking at other parts of the box.

Like human beings, pigeons seem to be superstitious, if you can call it that. They tend to repeat any action that was successful in the past in producing food. Some may go through complicated movements, just as a poker player may walk around his chair for luck The routine will be repeated even though it has no effect on the delivery of food.



Pigeon Ping-Pong — The pigeons pictured here are playing ping-pong. They're pros, too, because they only do it for gain. The birds, part of flock belonging to Physchology Prof. B. F. Skinner, also play tunes on a toy piano, push buttons to get food, tell time and differentiate between changing colors—like traffic lights. Dr. Skinner uses the pigeons to discover the relationship between human behavior and the prospect of reward for work. Pigeons bat table tennis ball back and forth with their beaks, as at top. When bird at left missed the ball, which rolled into trough in front of him, it automatically opened feeding station at right. Lower picture shows winner at right, collecting his reward of grain.

Honors Author — This new stamp honoring the great French satirical writer Francois Rabelais is being issued by the French postal system. The stamp is dark red and has a value of 12 francs—about 3½ cents.

Giant Atomic Tulips

A giant tulip, five inches in height and four inches wide, with a stem no thicker than a man's finger, is the sensation of Lisse, center of the Netherlands bulb-growing industry. This giant tulip and other flowers are the offspring of mother bulbs that were bombarded with X-rays or with neutron by Dr. Willem E. de Mol, director of the Laoratory for Ornamental Plant Research in Amsterdam.

After years of experimentation with irradiation, Dr. De Mol has produced tulips with flowers that vary in form from large smooth cups to small blooms with fringes like those of a Chinese fan-dancer. These last are variations brought about by treating the mother bulb, a white and flame-red flower, with X-rays. The first experimental plant of this kind was achieved two years ago; now there are five plants, each worth about 1,000 guilders.

The mother bulb of the atomic tulip, the Utopia, was subjected to bombardment with neutrons. The result was a scarlet tulip five inches long, with a diameter of four inches. It is a splendid flower, though the stalk is no thicker than a man's nger. The leaves resemble those of a succulent plant.

Tulip growers are particularly interested in the fact that ten years after X-ray treatment new variations still appear, proof of the powerful effect of irradiation on tulip bulbs. Geneticists are not astonished. They have long known that X-rays will bring forth new species of fruit flies by the hundred and also new species of plants. Even after the first new acceptable species or variety of a plant appears, much cross-breeding is necessary before an acceptable commercial producct is obtained. It takes from twenty to twenty-five years, for exxample, to prepare a new tulip for the market.

HEALTH HINT—Diabetes runs in families. Members of families in which there is diabetes both on the mother's side and the father's side are the ones who should be especially careful to avoid overweight.

The Perfect Loaf?

What is the ideal loaf of bread—and how is it made? Because he believes he has found the secret, 76-year-old Lord Teviot has been advocating the claims of the wholemeal loaf (made his way) in the House of Lords. And at his home, Adbury House, Newbury, Berks., a few days later, Lord Teviot demonstrated the right way to make the loaf, which, he declares, is his recipe for health and long life.

Here's the recipe. Take 2 lb. of wholemeal flour, 2 oz. of yeast, 2 tablespoonfuls of salt and one pint of water. Mix and knead well. Then bake for exactly one hour.

Says healthy-looking Lord Teviot: "My digestion is perfect and I've had only four teeth out in all my life .Much of the nutriment is taken out of the modern loaf. Give the children 100 per cent. bread and you would rid the country of half its stomach and dental troubles."

He points out that although the wholemeal loaf costs more than the white loaf, it is more economical because it is still fresh after a week and none has to be thrown away.

More Courtesy In Night Driving

Now that warmer weather has arrived, more and more drivers will be taking to the highways in the evening. We hope they will remember that a road is not a one-way affair, but two-way, with cars coming from each direction, often at speeds exceeding the legal limit.

In the daytime, even when traffic is running beyond the speed limit, there isn't too much danger so long as the driver has his mind on his driving and his eyes on the road. In the evening and at night added consideration must be given to the matter of glaring headlights. A recent study has found that "at speeds of fifty miles an hour a driver blinded by glaring headlights often will travel as much as 150 feet before he recovers sufficiently to distinguish a pedestrian or object on the highway."

City and town people are often serious offenders in neglecting to dim their lights on passing other cars, becacuse they are accustomed to drive with parking lights on in the city. On the open road they forget that they are using their brights and hence disregard the ordinary courtesy of using passing lights. All drivers are entitled to their driving pleasure, but at the same time the individual driver must remember that a little bit of courtesy on his part will make night driving safer for himself and others.

HOW TO GUARD AGAINST POLIO

As Polio began its seasonal upswing, there are indications that last year's epidemic might have marked a turning point in the history of the long war against that dread scourge. Experts think that advances in research may, before longk, break much of polio's power.

But while science girds for the nal assault on the great crippler, POLIO IS STILL DANGEROUS. Out of long experience doctors, hospitals and health departments suggest these basic precautions for protecting yourself and family against Infantile Paralysis, better known as polio.

1. Avoid crowds, especially contact with strangers who may carry the infection. Keep children with their own friends.
2. Don't get over-tired. Fatigue increases the danger of infection, makes results more serious.
3. Keep from getting chilled. Swimming is safe if it is done in non-polluted waters, for not too long a time. Don't remain in wet clothes.
4. Be clean. Wash hands before eating; keep food covered, well refrigerated.
5. Be alert to polio's early symptoms so you can call your doctor promptly. Symptoms include headaches, sore throat, nausea, fever, muscle stiffness.

A Clip To Remember—Peter Edson, correspondent for NEA Service and this newspaper, got a shock when he had his hair cut by Lee Dynes, a hotel barber. Using a technique he learned from a Frenchman, Dynes did the complete job with an old-fashioned, straight-edged non-safety razor. Reported Edson: "There was no bloodshed."

HOW TO FIX IT — By Harold Arnett

JITTER — By Arthur Pointer