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MEDICAL SCIENCE

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LIVE UP TO 200. SCIENTIST STARTS TESTS

By "Sunday Dispatch" Reporter.

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Dr. V. Korenchevsky, Russian-born British naturalised scientist, has set himself the task of finding out how you can live to be 150 or, perhaps, 200 years old.

And Dr. Korenchevsky believes that he and his colleagues, members of "The Club for Research on Ageing", can, by the result of their medical and biological research, prevent premature senility, in other words, you will not expect to die around the biblical three score and ten.

Dr. Korenchevsky cannot tell when his experiments will be concluded, but Lord Nuffield has given him £3,000, which will carry the work on for at least another three years.

In the peace & quietness of his laboratory, in the cloistered university at Oxford, Dr. Korenchevsky told me:

"Living to 55 or 100 is entirely a pathological matter. I am making a

study with other scientists about the make-up of the human body - why some people die at middle age and others do not.

"If we can discover the pathological reason for this it will be an easy matter for scientists to ensure a normal life well in excess of 100 years. We may be able to go up to 200 years.

"Recent advances in science have made it possible to start this research, and we hope it will provide an answer to one of medicine's greatest problems".

Dr. Korenchevsky explained that there are hundreds of causes which produce normal ageing and are responsible for premature senility.

"It is our task to try to find out what these causes are and to discriminate the different features of normal and pathological ageing. Every cause and feature will have to be examined by many different methods.

APOLOGY

We have been selling in Madras and elsewhere in India a remedy under the name "Rennard's Female Mixture" said to have been prepared to the formula of Dr. Emile Rennard.

The bottles and cartons in which the remedy is sold and the advertisements of the remedy in our publication "Medical Science" display in a prominent position the statement that the remedy has been manufactured by A. H. Cox & Co., Ltd., Brighton, England, and that we are their sole agents. These statements are without foundation. The remedy has not been manufactured by A. H. Cox & Co. Ltd. nor are we, nor have we ever been their agents or sole agents in India or elsewhere.

We most deeply regret that we should by these statements have caused A. H. Cox & Co. Ltd. annoyance and exposed them to the risk of litigation. We apologise to them for our un-warranted action and undertake that it will not occur again.

The Anglo-French Medical Agency, Ltd., Broadway, Madras.

MEDICAL SCIENCE

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"My particular branch of research will be the effects of the hormones on the pituitary gland, thyroid, adrenal, & sex glands on white rats.

"The result of experiments on animals do not always supply a conclusive argument for their use on human beings, and close co-operation between the clinical & experimental laboratories is necessary".

"The London County Council is co-operating with us in our research. It has started research on the effect of certain vitamins on aged people in Tooting Bec Hospital."

Widespread research is also going on in America, and "The Club for Research on Ageing" is working with its American counterparts. It is composed of Britain's leading scientists.

World's Greatest Eater?

Private Chester ("the Stomach") Salvatori, 28, hailed by U. S. Army Comrades as the world's greatest eater recently, had his first real meal for a long time.

He got a pass from a hospital in Atlanta, where he has been under observation by doctors studying his enormous appetite & went straight to a restaurant.

In 50 minutes he consumed the following "snack."

Seven orders of southern fried chicken, ten orders of French fried potatoes,

nine glasses of orange-juice, half a gallon of milk, one giant combination salad (equal to 10 restaurant's regular servings), five egg salads, two orders of olives two glasses of iced coffee, one watermelon & five slices of apple pie, each topped with a scoop of icecream.

This meal, typical of the food obtainable in the United States, cost Salvatori, the equivalent of Rs. 35.

An Exhibitionist

Doctors say Salvatori eats large meals because he is an exhibitionist, but Salvatori declares that, if his rations are cut, he steadily loses some of his weight which is 140 lbs.

He vaguely attributes his hunger to a car accident in which he was involved 12 years ago.

When Salvatori placed his order in the restaurant many diners lost interest in their own meals & gathered round to watch him.

They gasped at the end when Salvatori said he was only pleasantly full.

Salvatori regards his appetite as a curse "I am terrible ashamed of myself, but I can do nothing about it", he adds.

He never touches alcohol & spends all his money on food. Sometimes, to increase his income, he makes bets with other soldiers on eating capacity, then spends the proceeds on more food.

CURE FOR CANCER IN SIGHT?

EXPERIMENTS ON NUCLEAR ENERGY

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London, December 20-A universal cure for cancer is in sight.

Cancer control by synthetic hormones initiating chemical action on the human body was first announced two years ago and its effects are being studied by the joint committee of Empire Campaign and the Royal Society of Medicine.

A report presented at yesterday's meeting in London of the British Empire Cancer Campaign records steady progress in cancer research despite wartime difficulties. Cancer, however, remains a major fatal disease from which over 70,000 die annually in Britain.

Recent work on atomic energy has enabled the use of more potent forms of radiation than were thought possible 22 years ago when the Campaign began its activities. The Campaign has held consultations with other interested bodies on the possibilities of this treatment and this work is closely linked with that of the research committee on medical and biological application of nuclear physics set up by the Government.

Another field of investigation proceeding in Britain is the possibility of treatment by a serum obtained from tumours subjected to radiation.

VACCINE FROM EGGS TO FIGHT INFLUENZA LATEST RESEARCH AT FAMOUS LONDON HOSPITAL

Unhatched chicks may soon be helping to save lives of tens of thousands of people. Their co-operation has been enlisted by the famous Department of Research at St. Mary's Hospital, London, in the fight against influenza epidemics.

Influenza was one of the chief worries of medical men throughout the late war. They remembered how it had swooped on the exhausted nations after World War I and wiped out millions of their inhabitants. The same could happen again with even more deadly effect.

While world war II was still in progress men at St. Mary's got busy to find, if not a cure, at least a preventive. They collected eggs from specially selected pedigree hens. Into the chick embryo they injected flue virus. This was left to mature for a couple of days. Then the tops of the eggs were removed, the fluid drawn off and the vaccine prepared.

British war factories and fighting units provided the human guinea pigs upon whom the vaccine was to be tried. The inoculation proved strikingly successful. Three out of every four who had received the inoculation became immune.

Whether the egg proves to be the final weapon in the struggle against this obstinate and dangerous remains to be seen. But it has won a notable victory. If a widespread epidemic were to break out, the means would be available quickly to control it.

Vaccines were no new line of investigation for St. Mary's. One of its most distinguished teachers, Sir Almroth Wright, won fame for himself and for the Department of Research which he controls by his work on typhoid immunisation more than 40 years ago. In the teeth of strong opposition from wiseacres he developed and launched his anti-typhoid vaccine. Millions of campaigners in pestilential territories have lived to bless his genius and persistence.

VACCINE THERAPY

Next, Sir Almroth Wright turned his attention to vaccine therapy. Under his direction vaccines were used with great

success in the treatment of boils, septic infections and surgical tuberculosis. He has lived to see his pupils continue his work valuable new contributions. One of these is the research into allergic diseases conducted by Dr. John Freeman. Allergy is a curious form of hypersensitivity which causes some people to react in a distressing way to quite ordinary circumstances. The proximity of a cat, the presence of pollen in the air or the eating of fish causes them acute physical suffering symptoms.

The principle of the treatment is to inject repeatedly into the patient the substance which causes the trouble. Thus, for hay fever the pollen which gives rise to the condition is injected, on the assumption that familiarity produces immunity. St. Mary's was the first laboratory actually to grow pedigree grasses for research into the characteristics of pollen.

It was a plant of a different kind which provided St. Mary's with the most sensational medical discovery of recent years—penicillin. Everyone already knows the story: how Sir Alexander Fleming, while engaged on other experiments, glanced casually at a culture plate which he had discarded because a mould was growing on it; how he noticed that the mould had destroyed bacteria in its vicinity; how he cultivated the mould and extracted from it a substance that could destroy some of the most deadly germs of disease. He had found what scientists had been seeking for generations, an antiseptic which would attack the infection without harm to the white corpuscles in the blood.

Penicillin is, as we have seen, only one in a long series of life-saving factors discovered in this great hospital. When St. Mary's erects its new building—as it hopes to do soon with donations from millionaires and pennies from humble citizens the collaboration between the Research Laboratories and hospital will have room to develop and yield even richer fruit from the brains of Britain's medical scientists.

THE THOUGHT-READING CAMERA



Here's a machine which will make a stir in the world! It is nothing more or less than a machine to photograph thought—and it is not a chimera either, something to joke about, or the dream of some delirious scientist. It works at the Salpêtrière (a famous hospital in Paris). You are put on a table, and the operator registers your thoughts, painlessly.

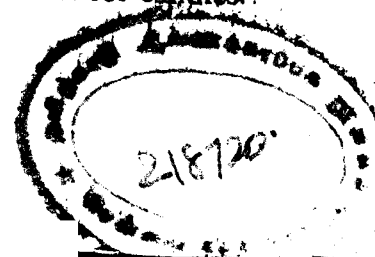
To obtain this miracle it is sufficient to have a moving-coil galvanometer wire, blank film, and the movement of thought-vibrations: the radioencephalogram is taken. You can no longer hide the secret objects of your meditations. A little red light above your head, a silk cord horizontal at the level of your nose, amplifiers somewhere else, and your thought is for ever disclosed and recorded. The thing is all the more marvellous as the emotional or time person who thinks of a hundred things at once, is, so to say, caught red-handed, and learns, stupefied, that at 3 hours 4 minutes 5 seconds he thought of taking a winter sports train instead of going to the office. Besides, extremely important and purely scientific information, certain sidelines are not lacking in amusement, as when the subject thinks of his mother, an intimate and tender thought, and the machine registers a "hook" characteristic of sweet emotions. If he is in

the clutch of passionate love there is a symbol which widens into a number of vibrant circles, making one think of ball lightning.

Neurotics, paralytics, and abnormals will be submitted to bio-electrical brain explorations, of which much good is expected. A new field, with infinite horizons, is open to science. What an unknown world will this discovery throw us into! But what shall we become if even our thought no more belong to us?

If a husband, worried about his marital happiness, submits to the operation, will he see the hook of "sweet emotion," reserved for pure tenderness, or will he see the Bacchanal of trembling circles and the ball lightning? M. Pierre Devaux (who controls these experiments) has not yet told us the secret of all the revealing signs. And it is possible to live without thinking at all. What would be the use of a thought machine in that case?

I can imagine Goethe on the operating table, the two pads upon his forehead, the amplifiers in full blast, and the assistants watching the apparatus. When at the moment of his death he exclaimed "Light! Light!" was it the mortal light of the soul of genius he called for, or was it for candles?



*This amazing mechanism will keep life in the body when the heart is not beating.

Hearts of Steel for Humans

By Madelin Blitzstein

Everything about the heart—its pains, its attacks, its stoppages—has led to many theories which often conflict one with the other. But on one phase of the heart problem scientists agree, and that is, that the task of cardiac surgery and heart repair is a particularly difficult and delicate one.

Today, however, there is new hope in this work because of a startling experiment, or invention, as it is perhaps best to label it, which, it is hoped, will lead to a new field in surgery—that of saving lives by keeping the heart beating where previously it had stopped for good.

Until very recently the surgeon's scalpel was limited in use principally to operations on the outer surface of the mysterious, life-giving organ, like sewing up the heart after stab wounds and similar injuries, or performing operations on the envelope around the heart, called the pericardium, from which stony calcium formations have occasionally been removed with success. But it is now hoped that the repair of disease-damaged valves in the interior of the heart may some day be made safe and practical by the use of a substitute heart & lung made of steel.

While a steel heart and lung may sound like something out of a modernistic art creation, the new apparatus has actually been developed to a successful stage at the University of Pennsylvania. There it has taken over the entire circulation of 13 animal patients, all cats, several of whom are still living nearly one year after the operation, & one of whom had a litter of kittens six weeks after she had been "fitted" up with the new apparatus.

This remarkable invention is the result of the painstaking research of Dr. John H. Gibbon, junr., of the Harrison Department of Research Surgery at the

University of Pennsylvania. Dr. Gibbon reported to a combined meeting of the Philadelphia Academy of Surgery and the Boston Surgical Society his opinion that the chromium-plated heart and lung might in the future take over at least part of the human circulation for a period of 20 minutes to one hour.

In this way, operations could be performed on the heart which could not possibly be performed otherwise because of the inability of the patient to live without the blood circulating through the body.

The necessity of this steel heart & lung is plainly seen in those patients who are suffering from what the medical world calls pulmonary embolism—a very dangerous complication which sometimes follows operations on other parts of the body. A blood clot, totally unexpected and unforeseen, suddenly forms and blocks the artery that carries the blood from the heart to the lungs.

Death follows quickly, sometimes almost instantly, taking place in less than a quarter of an hour. Dr. Gibbon, therefore, hopes that the steel heart will be attached so quickly that before the period of 15 minutes is up, & the patient is dead, the surgeon can successfully remove the clot.

The apparatus, which has so far only been tried on cats, consists of a metal cylinder which spins 300 revolutions per minute. Blood is piped into it from the jugular vein in the animal's neck and the whirling action throws the blood against the lining of the cylinder in a thin film which can easily absorb oxygen admitted to the lung from the top. This process is a replica of what takes place in the lining of the tiny air cells of the natural lung.

The freshly-oxygenated blood then flows into the steel heart which pumps it back into the carotid artery, located in the cat's neck as it is in the human being's; it is then forced backward into the living heart and parts of the body. This artificial system in the experiments took care of a little more than a half pint of blood per minute.

In his experiments with the artificial heart, Dr. Gibbon, in order to prove the practical value of his research, had to produce a simulated pulmonary embolism in the cats in order to see how the artificial heart would work. The pulmonary artery is first clamped shut while the cat continues to breathe.

The breathing, however, did no good because there was no blood passing through the lungs. Dr. Gibbon was able to hook up an artificial heart in 10 minutes through the neck arteries. In human beings, the wrist or the arm would be used instead of the neck arteries. "Electric eyes" regulate the pressure and "pulse" of the mechanical heart.

Dr. Gibbon's experiment is not the only one, by any means, now going on in cardiac work. Dr. Isaac Starr, Professor of Research Therapeutics at the University of Pennsylvania, for instance, has found out how much blood the heart pumps at each stroke by making a cardioballistograph or heart hammock, which is a bed suspended from the ceiling. The bed shakes with every heartbeat and shows on a specially constructed graph how much blood the patient's heart pumps at each stroke.

GUARANTEED CURE FOR TUBERCULOSIS?

56-YEAR-OLD SWEDISH SCIENTIST'S EXPERIMENTS

LONDON, December 18.—Prof. Hans Davide, a Swedish scientist, hopes to be the first man in the world to produce a guaranteed cure for tuberculosis, cables the *Daily Mail* Stockholm correspondent.

The professor has discovered a substance with which he had already cured infected rats; and early next year he plans to make tests on human beings.

Certain heart experiments have attracted wider attention and notice than others; perhaps the one which has occupied the spotlight more consistently than any other is the Carrel-Lindbergh "glass heart," which acts as a pump to carry nutrient solution to a piece of tissue to make it continue living. The "glass heart" is used to keep glands alive while outside of the body.

In the device of Dr. William B. Kountz of Washington University, however, the heart itself is the pump which forces the blood through a system of pipes and reservoirs similar to those of the body. Thus hearts which were stilled by death have been made to beat again for as long as six consecutive hours.

Other fields of heart work have been investigated and sometimes popular beliefs were found to be without scientific basis, other times they were found to be correct.

While for centuries poets have been singing songs of and refrains about the heart as the basis of deep emotions and consequent emotional pain, it was Dr. Fred Kaltefleiter, at Jefferson Medical College in Philadelphia, who declared unhesitatingly that the heart cannot feel any pain, even if pinched or rubbed. He found that the heart pains which people complain of are around and not in the heart as they think.

On the other hand, the old adage about two hearts beating as one has been proved by science. Two University of Pittsburgh scientists showed that by putting the hearts of baby newts into the bodies of adult newts, they could keep the hearts of the baby newts beating, although they had been transplanted from their original habitat. Both the adult and baby hearts kept on beating in the adult newts.

Prof. Davide, who is chief of the Central Bacteriological Laboratory of Stockholm city hospitals, has been working on his process for some years. He is fifty-six. Associated with him are Prof. H. Theorell, 43-year-old Principal of the Biochemistry Department of the Nobel Institute, and a young doctor Sune Bergstrom who is aged thirty.

It is not only for the treatment of snakebites that the venom of snakes is prepared in the Komatipoort laboratories. For example, the crystals of the puff adder's

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**Saved More Lives in Armies
Than Anyone Else**

"I was called," he said, "to see a man, a great public figure, who was suffering from a form of meningitis from which in the past no one had ever recovered. I put penicillin into his brain and in a moment he never looked back. He fit for work now and as good as ever."

Lord Moran was apparently referring to Lord Norman, former Governor of the Bank of England.

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