

Mail 23-1-26

WHITE MICE AND GUINEA PIGS

M. 23.

Help Adelaide Scientists Fight Disease

WONDERFUL EXPERIMENTS AT UNIVERSITY

At the Adelaide University 800 white mice are helping Professor T. Brailsford Robertson (Professor of Physiology) in experiments which have for an aim the eventual control of cancer.

At the Adelaide Hospital 300 guinea pigs are assisting Dr. Lionel B. Bull (Director of the South Australian Government Laboratory) in the classification of disease bacteria.

Both the white mice of Professor Robertson and the guinea pigs of Dr. Bull are being made to serve mankind in the everlasting fight against disease.

It is because the guinea pig and the mouse are susceptible to certain diseases which bear man that they are of value to the scientist. Professor Robertson and Dr. Bull aim through the use of mice and guinea pigs to derive information which will be applicable to human beings.

For 15 years Professor Robertson, with the aid of his mice, has been working on a revelation of the physiology of growth. From his experiments he aims to ascertain—

What in diet most affects growth?
The relation of growth to longevity?
The effect of growth upon the spontaneous development of cancer?

This is how the Professor uses his mice to throw light upon the problem he has set himself to unravel.

For one experiment, 144 specially bred mice are taken five weeks after birth and placed in cages.

The 144 mice are then divided into two groups of 72 each. One group is fed upon a normal diet, the other upon the same normal diet, plus one unusual substance.

Weighed Every Week

For the first seven months of their lives in the cages the mice are weighed once a week. After that time they are placed upon the scales every fortnight. The weight record of every mouse is kept with meticulous care and from the statistics gathered whirlwind curves of the two groups are constructed. These compared indicate the effect the departure from a normal diet has had upon the growth of the mice concerned.

The life of a mouse is about three years, and one of Professor Robertson's experiments extends over that time. Obviously many experiments are necessary for the gathering of data, and results can only be expected to come gradually and after extended effort.

Professor Robertson began his experiment 13 years ago when in California, and when he came to Adelaide about five years ago brought his mice and his great plan, and since an indication of the tremendous nature of his work will be gathered from some of the details on which he has had to be assured.

Firstly he had to choose a medium. Mice were selected, because they are susceptible to certain diseases common to man, and also a size which enables large numbers to be handled. The white variety was preferred, because with it a standard breed can be assured.

To conduct experiments perfectly a standardized mouse would be required. Professor Robertson committed his plan, and as no sterilization is possible, every one of the 800 mice at present living in a room in Darling Building are descended from a common sire. The founder of Professor Robertson's stud is four years dead, but his stock are marrying on, and one of the most important phases of the experiments is the supervision and breeding of the experimental stock. The mice which are placed in the cages are bred as carefully as the highest period of husbandry.

Disease Defied

Before Professor Robertson began his work, he was faced with the fact that the epidemic diseases might obliterate an experiment. This danger was removed by a wonderful system of hygienic housing and feeding, and Professor Robertson's experimental mice do not die, except from the diseases of old age, or which cancer is one. This is how disease has been defied.

The mice are housed in specially-made glass cages, and are fed upon cooked or sterilized food. They are provided with clean water, and Professor Robertson's experimental mice do not die, except from the diseases of old age, or which cancer is one. This is how disease has been defied.

The mice are housed in specially-made glass cages, and are fed upon cooked or sterilized food. They are provided with clean water, and Professor Robertson's experimental mice do not die, except from the diseases of old age, or which cancer is one. This is how disease has been defied.

With a normal length of life assured to the mice, fatality statistics are kept with an even greater solicitude for exactness than displayed by the largest insurance company. When a mouse dies, a post-mortem examination is held, and the age of the mouse and cause of death entered in the records.

One of the great aims of Professor Robertson's experiments is to connect the incidence of cancer with growth or diet. With such a problem, progress must necessarily be painfully slow, but already definite results have been revealed. The experiments have shown that 50 per cent. of the mice placed under observation die of cancer. That early growth is related to the susceptibility to cancer has also been proved, and Professor Robertson can divide his mice groups by means of his growth curves, and say which will be most susceptible to the disease.

Professor Robertson is too much of a scientist to predict or forecast sensational results from his experiments, but he has faith in his idea. "I believe," he said, "that when we understand normal growth, we will understand cancer, and when we understand the disease we will have a chance to control it."

At the Adelaide Hospital Laboratory

guinea pigs help Dr. Bull and his staff in a different way. Whereas Professor Robertson's white mice help him by being healthy, Dr. Bull's guinea pigs assist him by contracting disease.

The guinea pig's susceptibility is its misfortune, and the fool fortune of man. For some unknown reason the guinea pig is a prey to the same diseases, and a refuge for the same organisms, as man. At the Adelaide Hospital 300 guinea pigs are kept on hand to help science classify bacteria.

If the doctor wants to know whether a certain bacillus found upon a person is the organism responsible for a deadly disease, or just a harmless first cousin with the family likeness strongly stamped upon it, he asks the guinea pig.

Under the microscope a bacillus taken from a patient may resemble the organism which produces diphtheria. To find out if it is really the diphtheria bacillus a guinea pig is inoculated by means of a hypodermic syringe. The animal is then placed aside for observation, and the doctor might examine it two or three times a day for a month. If the guinea pig shows symptoms of the disease, it is killed (painlessly by chloroform) and a post-mortem examination held. By the study of the animal from the time of inoculation until death, and by the post-mortem examination the scientist is able to classify the bacillus of the guinea pig, and, incidentally, of the patient from which it was originally taken.



PROF. T. BRAILSFORD ROBERTSON

Guinea pigs are mainly used at the hospital because they are easily bred, easily handled, and are quick to mature. A guinea pig is inoculated as soon as it is born, and a baby guinea pig will lose its mother a few days after birth. With rabbits, which are even more susceptible to some diseases than guinea pigs, the scientist has to wait a considerable time before he can utilize them in his experiments.

Fowls, Dogs, and Pigeons

Guinea pigs, however, are not the only animal serpents employed by Dr. Bull and his staff. At present there is a fowl at the Hospital, which is helping to classify a species of tubercular bacillus. There are three kinds of tubercular bacillus—bovine, human, and avian—and all three are sometimes found in human beings. It is to prove that an organism taken from a patient is of the avian variety, that the services of the fowl mentioned have been requisitioned. Sometimes pigeons, rabbits, and even dogs do similar service.

But guinea pigs are the principal servants of the Hospital Laboratory staff, and this, after all, is rather hard on the guinea pig. His lot has been rather aptly put by an unknown poet, thus—

The gentle little guinea pig—
He does not scratch or bite,
But feeds on serums all day long—
They bury him at night.

But even the life of a hospital guinea pig has its compensations. The animals are well kept, housed, and fed, and a painless death from chloroform intervenes before they suffer greatly from the ravages of any disease. And that, if it is of any advantage, and it has any after knowledge, the guinea pig has the comfort of knowing that it has performed a wonderful service to mankind.

"Guinea pigs are absolutely essential to the successful running of the Hospital laboratory." Thus Dr. Lionel Bull paid a tribute to the peculiar little animal.

UNIVERSITY GRADUATES

1-26

2—Mr. Bernard G. Griff

Mr. Bernard Gordon Griff, who has just graduated in law at the University of Adelaide, has won a bursary, in England. He was born on March 12, 1904, but received all his education in Australia. He came with his parents to Australia at the age of seven years, and was entered as a scholar of St. Peter's College. He passed the junior public examination in 1919, the senior public in 1920, and the higher public in 1921.

He then took the law course at the University, and went straight through from 1922 to 1925. He was one of the



—Lammer Portrait.

MR. BERNARD G. GRIFF

who has graduated in law at the University of Adelaide.

first University undergraduates to go into residence in St. Mark's Residential College on Pennington terrace, North Adelaide. Mr. Griff was articled to Messrs. Coventry and Roberts, solicitors, of Waymouth street.

Spore appeals to Mr. Griff, who plays with the B teams of the University in both football and cricket. He is also keen on aquatic sports, and is spending his vacation at Glenelg.

He went with the University delegates to Sydney last year for the inter-University debate, and scored second place. He intends to specialise in the work of a barrister, as he considers that the solicitor deals with the least interesting side of law.

Although he has finished his law course he intends to continue his studies at the University. So that he will have two sittings to his law he will do the accountancy course and delve further into matters regarding law.

Mr. Griff speaks with enthusiasm of life at St. Mark's Residential College. He is the treasurer of the college club and secretary of the debating society. He is brother of Phillip Griff, of Broken Hill, and is the first member of his family to follow the honorable profession of law.

Mr. Griff does not intend to practise immediately.

Reg 25-1-26

RESEARCH SCHOLARSHIP FOR MEDICAL WOMEN.

The Registrar of the University of Adelaide has received full particulars of the William Gibson Research Scholarship for medical women. Miss Maud Margaret Gibson has placed in the hands of the Royal Society of Medicine 20,000 of money sufficient to provide a scholarship of the yearly value of £200, in memory of her father, the late Mr. William Gibson of Melbourne. The scholarship is awarded from time to time by the society to qualified medical women who are subjects of the British Empire, and is tenable for a period of two years, but may, in special circumstances, be extended to a third year. The next award will be made in June this year. In choosing a scholar the society will be guided in its choice "either by research work already done by her, or by research work which she contemplates. The scholar shall be free to travel at her own will for the purpose of the research she has undertaken." Applications should be received in London not later than Tuesday, June 1. Full particulars of the method of application may be obtained from the Registrar at the University.