

Experiments on animals during 1908 in Great Britain and Ireland.

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EXPERIMENTS ON ANIMALS DURING 1908 IN GREAT BRITAIN AND IRELAND.

[From the Reports of the Inspectors under the Act. These Reports, price 6d., can be purchased, either directly or through any bookseller, from Wyman and Sons, Fetter Lane, E.C.]

ENGLAND AND SCOTLAND.

Three new places were registered for the performance of experiments, and three places were removed from the register, during 1908. All licensees were restricted to the registered place or places specified on their licenses, with the exception of those who were permitted to perform inoculation experiments in places other than a "registered place" with the object of studying outbreaks of disease occurring in remote districts or under circumstances which render it impracticable to perform the experiment in a "registered place."

The total number of licensees was 453. Reports were furnished by (or, in a few exceptional cases, on behalf of) these licensees, in the form required by the Secretary of State. The Reports show that 126 licensees performed no experiments. These numbers include 23 licensees whose licenses expired on February 29th, 1908, and of whom 22 returned no experiments in 1908.

The total number of experiments is divided into: (1) those in which anæsthetics were used: (2) those which were performed without anæsthetics.

I.

The total number of experiments in which anæsthetics were used was 2,851. These experiments were performed as follows :—

Under License alone	1,452
„ Certificate C	156
„ „ B	989
„ „ B+EE	247
„ „ F	7

In all experiments performed under license alone, the animal must during the whole of the experiment be under the influence of some anæsthetic of sufficient power to prevent the animal feeling pain; and the animal must, if the pain is likely to continue after the effect of the anæsthetic has ceased, or if any serious injury has been inflicted on the animal, be killed before it recovers from the influence of the anæsthetic which has been administered.

Certificate C allows experiments to be performed, under the foregoing provisions as to the use of anæsthetics, in illustration of lectures.

Certificate B exempts the person performing the experiment from the obligation to cause the animal on which the experiment is performed to be killed before it recovers from the influence of the anæsthetic. If the animal be a dog or a cat, Certificate EE is necessary in addition to Certificate B.

Certificate F is required in all cases of experiments on a horse, ass, or mule.

In the experiments performed under Certificate B (or B+EE, or B+F), the operations are required to be performed antiseptically, so that the healing of the wounds shall, as far as possible, take place without pain. If the antiseptic precautions fail, and suppuration occurs,

the animal is required to be killed. It is generally essential for the success of these experiments that the wounds should heal cleanly, and the surrounding parts remain in a healthy condition. After the healing of the wounds the animals are not necessarily, or even generally, in pain. Experiments involving the removal of important organs—including portions of the brain—may be performed without giving rise to pain after the recovery from the operation; and, after the section of a part of the nervous system, the resulting degenerative changes are painless. In the event of a subsequent operation being necessary in an experiment performed under Certificate B (or B + EE, or B + F), a condition is attached to the license requiring all operative procedures to be carried out under anæsthetics of sufficient power to prevent the animal feeling pain; and no observations or stimulations of a character to cause pain are allowed to be made without the animal being anæsthetised.

In no case has a cutting operation more severe than the lancing of a vein, just under the skin, been allowed to be performed without anæsthetics.

II.

The vast majority of experiments on animals in this country are inoculations, with a few feeding experiments, or administration of various substances by the mouth or by inhalation, or abstraction of a minute quantity of blood for examination. These experiments form no less than 97 per cent. of all experiments in this country during 1908. These experiments were all made without anæsthetics, as follows:

Under Certificate A	85,121
" " A + E	460
" " A + F	202

It will be seen that the operative procedures, in

experiments performed under Certificate A, without anæsthetics, are only such as are attended by no considerable, if appreciable, pain. The certificate is, in fact, not required to cover these proceedings, but to allow of the subsequent course of the experiment.

The experiment lasts during the whole time, from the administration of the drug or injection, until the animal recovers from the effects, if any, or dies, or is killed, a period extending over several days, or even weeks. The Act provides that, unless a special certificate be obtained, an animal must be kept under an anæsthetic during the whole of an experiment; and it is to allow the animal to be kept without an anæsthetic during the time required for the development of the results of the inoculation that Certificate A is given and allowed in these cases. If the animal be a dog or a cat, Certificate E also is necessary; or Certificate F, if the animal be a horse, ass, or mule. It must not be assumed that the animal is in pain during the whole of the time. In cases of prolonged action of an injected substance, even when ending fatally, the animal is generally apparently well, and takes its food as usual, until a short time before death. The state of illness may last only a very few hours, and in some cases it is not observed at all.

In a very large number of these experiments, the results are negative, and the animals suffer no inconvenience whatever from the inoculation. In the event of pain ensuing as the result of an inoculation, a condition attached to the license requires that the animal shall be killed under anæsthetics as soon as the main result of the experiment has been attained.

Inoculations into deep parts, involving a preliminary incision in order to expose the part into which the inoculation is to be made, are required to be performed under anæsthetics.

The increase in the number of inoculations during 1908 was mainly due to 12,500 experiments performed on behalf of the Royal Commission on Sewage Disposal. These experiments consisted in exposing the ova and young of fish to the influence of effluents in different stages of purification and dilution.

Of the rest of the inoculations made during 1908, the majority were made for the investigation of cancer. For this purpose the animals used, almost exclusively, were mice.

A large number of experiments, almost wholly of the nature of inoculations, were performed either on behalf of official bodies with a view to the preservation of public health, or directly for the diagnosis and treatment of disease. Several County Councils and Municipal Corporations have their own laboratories in which bacteriological investigations are carried on, including the necessary tests on living animals; and many others have arrangements by which similar observations are made on their behalf in the laboratories of Universities, Colleges, and other Institutions. A sewage farm is registered as a place in which experiments on living animals may be performed, in order that the character of the effluent may be tested by its effects on the health of fish. The Board of Agriculture and Fisheries has a laboratory which is registered for the performance of experiments having for their object the detection and study of the diseases of animals. In other places, experiments have been made on behalf of the Home Office, the War Office, the Colonial Office, the Local Government Board, the Metropolitan Asylums Board, the Royal Commission on Tuberculosis, the Advisory Committee for Plague Investigation in India, and the Tropical Diseases Committee of the Royal Society. Sixty-six licensees return over 12,000 experiments which were performed for Government Departments, County

Councils, Municipal Corporations, or other Public Health Authorities; 2,332 experiments were performed by three licensees for the Royal Commission on Tuberculosis; and thirteen licensees performed nearly 5,000 experiments for the preparation and testing of antitoxic sera and vaccines, and for the testing and standardising of drugs.

The irregularities which occurred during 1908 arose from misunderstanding or inadvertence with respect to the extent or application of certificates. They are as follows:

One licensee performed 186 inoculation experiments in excess of the number for which Certificate A had been given.

One licensee performed feeding experiments on seven puppies, one kitten, and two rodents, without obtaining the necessary Certificates A, E.

One licensee exceeded the terms of his certificate, which authorised the abstraction of small quantities of blood, by bleeding to a considerable amount.

One licensee who held Certificate B, authorising exposure to X-rays and the application of heat to the skin under anæsthetics, carried out these procedures without an anæsthetic.

Two licensees holding Certificate A, authorising experiments without anæsthetics, performed feeding experiments which were not indicated in their certificates.

By direction of the Secretary of State, a suitable admonition was addressed to each of these licensees.

IRELAND.

During 1908 there were fifteen registered places in Ireland. The number of licensees was 20, of whom 4 performed no experiments during the year. The total number of experiments during the year was 390. Of

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these, 42 were made under the license alone. The rest were made as follows :

Under Certificate	A	322
" "	C	21
" "	A + E	2
" "	B + EE	1
" "	F	2

The Inspector for Ireland, Sir William Thornley Stoker, gives the following list of the animals used during 1908 :

Guinea-pigs	208
Mice	113
Rabbits	38
Dogs	15
Cats	3
Sheep	3
Cattle	3
Fowl	3
Horses	2
Goat	1
Rat	1
	390

“The experiments,” he says, “were very various, and included studies of the mechanism of respiration, blood pressure, and cardiography. The differentiation of various forms of blood stains, the diagnosis of cattle diseases, the consideration of questions concerning food-poisoning, of typhoid fever, of the actions of various drugs on the heart and blood, of tuberculous milk, of the action of the vagus nerve, of the diagnosis of urinary diseases, were all matters considered. The study of meningeal cocci, of gland secretion, of the etiology of pulmonary tuberculosis and cerebro-spinal meningitis of the epidemic form, were also subjects of investigation.

“The work done in Ireland under the Act was, in my opinion, free from abuse, and was sincere and well intentioned.

“The increase in the number of licensees and of their experiments is to be attributed to the study of new investigations and treatments of disease by means of antitoxines, sera, and vaccines. This branch of physiological and pathological work is of great value and importance, is unattended by more than very slight pain, and promises even greater results in the future than it has achieved in the past.”

Summary.

Of the total number of experiments made during 1908 in Great Britain and Ireland, the vast majority were simple inoculations. No less than 97 per cent. of the animals used for experiment were subjected either to inoculation or to some similar treatment not involving any cutting operation. Many of them suffered no pain at all; the result was negative. The chief purpose of these inoculations was for the study of cancer; and for that research the animals used were mice. Of the remaining experiments, which are only 3 per cent. of the total number, the majority were made under a license alone, or under a license plus Certificate C. In all these the animal was anæsthetised throughout the whole of the experiment.

There remain only the experiments made under a license plus Certificate B, or B+EE or F. These are less than $1\frac{1}{2}$ per cent. of the total number. In all of them the animal was anæsthetised throughout the whole of the experiment, and was allowed to recover and to be kept for observation. The licensee was required to use antiseptic precautions, and, if these failed and suppuration occurred, the animal was required to be killed; and a condition was attached to the license forbidding further operation or painful stimulation except under an anæsthetic.