

Editorial Note

The following 'Ethical principles and guidelines for scientific experiments on animals' are reprinted here with the kind permission of the Commission appointed to formulate the guidelines and both Swiss Academies represented on the Commission. They form the basis on which Editors and referees judge whether studies involving experimentation on animals can be considered for our journal. Authors are asked to adhere strictly to these rules. **EXPERIENTIA** fully endorses article 5.7 wherein "Scientific journals are urged not to accept the results of such experiments [i.e. those which contravene the ethical principles and the present guidelines] for publication".

Swiss Academy of Medical Sciences and Swiss Academy of Sciences

Ethical principles and guidelines for experiments on animals

Preamble

These present guidelines issue from the recognition that man, in his need to solve the problems of his existence, cannot dispense with experimentation on animals, while on the other hand the ethical principle of reverence for life lays upon him the charge of protecting animals.

They reflect the conviction that scientists, as responsible members of the community, should of their own accord devise, implement, and ensure the observance of the measures necessary to achieve the optimal resolution of this conflict.

The Swiss Academy of Medical Sciences and the Swiss Academy of Sciences have therefore jointly formulated the following ethical principles and guidelines for scientific experiments on animals, which were adopted at the meetings of their Senate in the spring of 1983 and are to serve as a code of conduct for all scientists and members of allied professions practising in Switzerland.

I. Legal Bases

1.1 The Swiss Animal Protection Act of March 9th, 1978, lays down principles (Article 2) for the treatment of vertebrate animals, according to which:

no person may, without justification, inflict pain, suffering, or injury upon an animal, or cause it fear.

In Section Six, conditions governing experiments on vertebrates are set forth: according to Article 12, experiments on animals are to be construed as:

any procedures in which live animals are used for the purpose of testing a scientific theory, acquiring knowledge, obtaining or testing a substance, or determining the effect of a particular procedure on the animal, as well as any use of animals in experimental behavioural research.

Articles 13 and 14 contain statutory regulations according to which:

experiments which cause the animal pain may not be performed without permission from the authorities and must be limited to the essential minimum.

1.2 Scientists are under obligation to conduct experiments on animals in conformity with the Act and the appurtenant Statutory Regulations of May 27th, 1981. These legal provisions, however, admit of considerable latitude in their interpretation, which has to be nar-

rowed, on the one hand by the authorizing bodies and the organs of jurisdiction and, on the other hand, by scientists themselves within their own responsibility.

II. Ethical Principles

2.1 Being endowed with the faculties of reason and reflection, man is answerable for his actions. In these actions, it is his duty to seek the greatest good of all concerned. Life confronts man with ineluctable problems to solve which, failing ready resources, he must contrive to augment the range and the fullness of his knowledge. At the same time, it is also man's duty to respect, to preserve, and to care for the gifts of nature, and the ethical principle of *reverence for life* demands that man should protect his fellow-creatures, the animals.

2.2 Experimental investigations in animals are often of decisive importance for the understanding of vital phenomena. They represent a particular form of man's age-long practice of using animals for the sake of his own self-preservation and welfare. Knowledge acquired through experimentation on animals is of service to man in protecting life, in alleviating suffering, and in ensuring his survival. The right claimed by man to use

animals is, however, inseparable from the duty to avoid abuse of that right.

2.3 The ethical problems of experimentation on animals arise from the conflict between the endeavour to realize the above-mentioned human values, on the one hand, and ethical principles such as reverence for life and abstinence from acts inflicting pain and suffering, on the other hand. This conflict is unavoidable: it can only be responsibly settled by weighing the mutually opposing values.

2.4 The ethical principle of reverence for life of man and animals demands, in particular, that experiments on animals should be restricted as far as possible, without, however, denying man the fulfilment of his own claims to security.

III. Ethical Requirements for the Legitimation of Experiments on Animals

3.1 The requirement that experiments on animals must be justified on the grounds of greater good imposes upon scientists the duty of adducing proof of the necessity and the suitability of each experiment to be performed.

3.2 The more essential is the knowledge to be gained from experiments on animals and the greater its import for the upholding of human values, the more plainly justifiable are such experiments: to protect human life and to mitigate severe suffering are not merely prerogatives that man may exercise but obligations he must fulfil.

3.3 The greater the suffering an experiment is apt to inflict upon an animal, the more acute becomes the question of its justifiability.

3.4 Experimentation on animals must conform to the established principles and precepts of science. In particular, the results sought must extend clearly beyond the confines of present knowledge, the assumption to be tested must be reasonable, and the procedure chosen must be likely to achieve success and consistent with the existing state of research.

3.5 Experiments on animals which are of direct and readily perceptible benefit to the life and health of man and animals are ethically legitimate. These include experiments directed towards prophylactic, diagnostic and therapeutic ends in medicine, or serving the interests of safeguarding against dangers. Experimental investigations in human beings can, in many fields, only be performed if they are warranted by the results of experiments on animals (cf. article II.3 of "Richtlinien für Forschungsuntersuchungen am Menschen", published by the *Swiss Academy of Medical Sciences*, December 1st, 1970).

3.6 Experiments on animals are ethically legitimate if – even without being of immediately appreciable benefit to life and health – they serve the end of acquiring new knowledge, for instance if they can in all probability be expected to contribute significantly to our knowledge of the make-up, function, and behaviour of living creatures.

3.7 Experiments on animals which under the Animal Protection Act require official authorization are ethically legitimate as part of the curricula of universities and other institutes of higher learning for students of medicine, dental surgery, veterinary medicine, pharmacy, and biology, and in the vocational training of laboratory technicians and paramedical staff, provided that no alternative possibilities exist for them to acquire the necessary, more profound understanding of vital phenomena, or be trained in the skills needed for the performance of experiments.

3.8 Experiments on animals are not ethically legitimate if sufficiently conclusive alternative methods exist of acquiring the knowledge sought. Experiments on animals which have already been competently performed may not be repeated without adequate grounds.

IV. Ethical Requirements for the Conduct of Experiments on Animals

4.1 The ethical principle of reverence for life demands that the greatest possible gain in knowledge should be achieved at the cost of the fewest possible experiments and animals, and of the least possible suffering of the latter.

4.2 It is the duty of all persons participating in experiments on animals to be heedful of the well-being and assure the least possible suffering of the experimental animal. The decisive criterion on which the fulfilment of this duty depends is their professional competence and express acceptance of their responsibility towards the animal.

4.3 Experiments apt to inflict pain must be performed under general or local anaesthesia, unless anaesthesia is precluded by the purpose of the experiment (Animal Protection Act, article 16.2).

4.4 If pain, suffering, or fear are inevitable accompaniments of an experiment, all possible measures must be taken to limit their duration and intensity to the essential minimum. The animal must be able to give expression to its sensations and, whenever possible, able to avoid painful stimuli. For this reason, the use of paralyzant substances without narcosis is forbidden.

4.5 In all experiments which lead to chronic suffering or necessitate repeated interventions, every possible measure must be taken to mitigate suffering and to dispel anxiety. It is particularly important in such cases that

the animal should be carefully accustomed to the experimental conditions and cared for in the proper fashion before, during and after the experiment.

4.6 Experiments apt to cause the animal severe suffering must be avoided by modifying the hypothesis to be tested in such a way that other criteria of the successful conclusion of the experiment can be applied, or by foregoing the anticipated gain of knowledge. Severe suffering is to be construed as any state which in man would be qualified as unbearable without palliative measures.

4.7 Continued physical restraint must only be resorted to after procedures have been considered and found wanting. All possible measures must be taken to alleviate anxiety, including in particular careful and gentle accustoming of the animal to the experimental conditions.

4.8 Animals on which experiments are to be performed should, as a rule, originate from special laboratory-animal breeding units. Animals of unknown origin must not be used. Particular reservation is called for in the case of species living in the wild. Experiments on species threatened with extinction are only justifiable if they contribute towards the preservation of those species.

V. Responsibilities

5.1 The scientific, moral, and legal responsibility for the legitimation, planning, and performance of experiments on animals is borne by the scientist-in-charge. All other persons participating in the experiment share the moral responsibility: they must therefore have complete freedom to voice their opinions and, if need be, refuse their co-operation.

5.2 In consequence of his insight and within the bounds of his knowledge, each individual scientist is responsible for ensuring that, within his own sphere of influence, the Animal Protection Act and the present guidelines are duly observed.

5.3 It is the duty of all scientists to take and to support all conceivable measures towards the restriction of experiments on animals, in particular through the development of alternative methods and the constant improvement of test systems in order to augment the

relevance and validity of experiments on animals. It is their further duty to contribute towards the avoidance of unnecessary experiments on animals by promoting the development and operation of information systems and data banks as well as appropriate means for the communication of the results of experiments on animals, including those of experiments with a negative or inconclusive outcome.

5.4 Scientists are duty-bound to subject to constant, critical scrutiny the relevance and validity of experiments on animals stipulated by existing legal provisions enacted to protect mankind from danger, and, whenever necessary, to use their best resources to bring about amendments to these regulations.

5.5 Scientists are urged to exploit the findings of behavioural research in order to hasten the development of new experimental strategies which, in experiments causing pain and anxiety, could diminish or eliminate the animal's perception of pain.

5.6 It is the duty of scientists and of institutions for the advancement of science constantly to promote the training of persons participating in experiments on animals, to oversee their knowledge and capabilities in an appropriate manner, and to instil, during their tuition, into students of the disciplines entitled to conduct experiments on animals a sense of their ethical responsibility.

5.7 It is the duty of the institutions for the advancement of science to deny their support to experiments on animals which contravene the ethical principles and the present guidelines. Scientific journals are urged not to accept the results of such experiments for publication.

5.8 The Swiss Academy of Medical Sciences and the Swiss Academy of Sciences consider it, in particular, their permanent duty to review the adequacy and validity of legal texts and provisions, as well as of their own ethical principles and guidelines in the light of the existing state of science and to foster among the general public the assumption of a more critical attitude towards the claims for welfare and security of which experiments on animals are a consequence.

Berne, 6th and 7th March 1983