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Richard K. Morris

Trinity College

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same old answer comes out: we need humane education in the system.

I have tried to talk junior humane programs to local humane societies and they say, yes, that's wonderful, but we don't have the time and staff and, besides, exactly how do you go about it? I try pointing out that ecologists and people in the humanities and the college young people are our brethren but no one has the time for that kind of talk, either.

So my challenge to you is this—and might I add that I've come to this after long soul-searching. I would love to bury myself in one small program. I'm not a person who likes to take on the whole scope. It's terribly defeating. I would like to stay in one small program where I can see at least one tiny result, but I don't think it's possible — not for those of us who are leaders in the humane movement. In order for us to implement the dream of Mrs. Flemming and all of those who have worked with The Kindness Club, we must be leaders who are capable of the groundwork of that dream. We must be willing to try to subvert the system of the western world because only by subversion of that system that says that man is unique and supreme can we ever hope to produce a world where animals count, where the individual man counts, where land counts, where everything counts, where The Kindness Club for children is anything more than a quaint diversion which children will be expected to outgrow.

If the active young people have taught us anything, it is that there is no such thing as a partial commitment. The world is moving too fast, the environment is being destroyed too fast. As Peter Schrag, in "Life on a Dying Lake" in a recent *Saturday Review* has pointed out, "We are trying to satisfy a new, though still unclear, sense of community with old priorities." So, he says, "evasion of the issues is inevitable," but a "professed commitment to protect an environment that ends with a squabble over sewer taxes is no commitment at all. . . . Can one take seriously an organization whose interest in conserving fish is unmatched by a position on the antiballistic missile?" And so with us. A commitment to create kinder, gentler, more sensitive children that ignores a new shopping plaza which will destroy a natural watercourse is no commitment at all.

I repeat: "We are trying to satisfy a new, though still unclear, sense of community with old priorities." And if we continue to do so, then The Kindness Club, on which all of us have worked so hard, will someday be another experiment like the Band of Mercy. It's no good to teach children kindness and love and concern for all living things unless we, as adults, and as leaders of the humane movement, are willing to try to build and accept the kind of world where such an involvement is possible.

The Misuse of Animals in the Science Classroom

**By Prof. Richard K. Morris
Professor of Education, Trinity College
Hartford, Connecticut**

At The HSUS Conference held in Washington in 1961, Dr. James T. Mehorter of the University of Vermont declared ". . . our historic failure in humane education revolves about two points: (a) a philosophy, and (b) a psychology." Seven years later, as moderator of a panel discussion on humane education, I pointed out that there was a need for research leading to a defensible philosophy of humane education and research into the psychological effects on young people of violence on television, gun clubs in the schools, and of elementary and secondary school experiments on living animals. This "historic failure" is still with us today.

In the area of philosophy, there have been some hopeful stirrings. The message of the humane movement has attracted such distinguished philosophers as Brand Blanchard, F.S.C. Northrop, and John Findlay. Reverend Charles N. Herrick, whom many of you know, now pursuing an advanced degree in philosophy at Trinity College, and Associate Professor Robert Brumbaugh of the philosophy department at Yale, have recognized the urgent need for a more humane ethic—and they are doing something about it.

A few months ago, I wrote to Dr. Jean Kelty that those of us involved in teacher training should make every effort to enroll philosophers of education in the task of forging what Albert Schweitzer called "a boundless ethic that passes beyond man and includes all living creatures." This year, as vice-president of the New England Philosophy of Education Society, it is my intention to do all in my power to introduce this neglected objective into the deliberations of that forum. If we do not involve the teachers of teachers, and the teachers themselves, in the ethic of our cause, we will have lost some important allies.

In the area of needed psychological research, the forecast is less certain. I suspect that most psychologists and psychiatrists — educational psychologists excepted — have been over-sold on a therapy which would in no way restrain the individual. Restraint, they declare, inhibits; inhibitions are detrimental to human development. And yet societies or cultures devoid of restraints on undesirable behavior make a mockery of individual freedom and sow the seeds for their own destruction.

If we are to eliminate or even reduce the abuse to animals in our country's elementary and secondary classrooms, we must have the support of pertinent psychological findings that demonstrate the extent to which there exists a whole host of suspected relationships. It was the paucity of such information, particularly the lack of a definition for cruelty and pain, that handicapped the prosecution in the East Orange, New Jersey, case where a teacher encouraged a student to inject Rous sarcoma (a cancer-producing virus) into four live chickens. It was the paucity of such information that blunted the HSUS campaign of January, 1967, designed to eliminate live animal experimentation and dissection in our elementary and secondary schools, thus permitting the so-called experts in psychology and psychiatry to assert categorically, but without offering proof of their own, that our Society's campaign was "psychologically all wet."

On other fronts, we have made some progress. Permit me, for a moment, to turn to our experience in Connecticut. We were painfully aware of what went on in the science fairs within our state. The record was well documented. I served as a judge in two such fairs. This led to my determination to criticize the unscientific procedures I observed — the needless repetition of some experiments, the lack of proper quantification, and the cruelty and suffering which live animals endured. I was not without qualification to undertake such criticisms. I was a former biology teacher and my doctoral dissertation at Yale concerned *Education and Scientific Inquiry*. Many educators were willing to agree with me that science fair projects were dubious contributions to the learning process. The State Department of Education was happy to disclaim any legal connection with or responsibility for the science fairs. Yet it remained a fact, in spite of the Department's disclaimer, that most student projects in the fairs originated in the schools. What were we to do?

In November, 1965, in a talk before the HSUS Connecticut Branch, I proposed that we attempt to secure a regulation to be issued by the State Board of Education regarding its stand on the care and use of animals in our schools. The Executive Director of the Connecticut Branch, Rear Admiral James C. Shaw, remembered this suggestion and asked me to arrange a luncheon meeting at which he, Allen Loeb of New Haven, and myself would present to Commissioner William J. Sanders a draft of our proposal. The result was a

policy statement passed by the State Board of Education on 7 February 1968.

The full text of that policy statement reads as follows:

For science to be taught effectively in the schools, there must be a variety of objects, equipment, materials and supplies available for study at first hand. Living plants and animals are included, since they comprise a significant part of man's environment.

It is the position of the State Board of Education that the use of living animals as an adjunct to teaching science is quite appropriate and is to be encouraged under conditions which insure proper care and treatment for any creatures used for instructional purposes. This is in keeping with the requirement of Connecticut Statutes that schools shall provide "instruction in the humane treatment and protection of animals."

The State Board of Education urges that the following principles be observed in carrying on the instructional program of the public elementary and secondary schools and in any other school-sponsored activities:

1. Animals should always be maintained under the best possible conditions of health, comfort and well-being.
2. No vertebrate animal should be subjected to any experiment or procedure which interferes with its normal health or causes it pain or distress.
3. Any experiment which involves the use of vertebrate animals should be carried out by or under the personal direction of a person trained and experienced in approved techniques for such experiments.

This policy statement went out in a circular letter from the desk of the Commissioner to all Chairmen of Boards of Education, to all superintendents of schools, and to all heads of science departments throughout the State of Connecticut.

Incidentally, Dr. Sanders told me just the other day that no action he had taken ever prompted such a volume of fan mail. It came from all over the country. This is proof to me that you people really do your homework.

It must be noted, not without some regret, that a policy statement of this kind is not the regulation we had sought and therefore would not have the effect of law. Yet it does represent the stand of the State Board of Education and, as such, can be used as an instrument to promote more humane practices in our schools. Admiral Shaw has stated his view thus: "We found that a straight, frontal attack on the problem was useless at the time. Nevertheless, the policy statement gave us an effective tool. As cases have come to

our attention, we have been able to use it. Further," he asserted, "our clipping service indicates a substantial reduction in complaints after the policy went into effect. Our plan now will be to take any such complaints as may occur and publicize the offense as contrary to the Board's policy and in violation of the Connecticut anti-cruelty law, or of Sec. 10-15 of the Statutes which calls for instruction in the humane treatment and protection of animals and birds."

When I asked a friend of mine to secure for me the new 1968 editions of the three texts prepared by the Biological Sciences Curriculum Study (better known as BSCS), she inadvertently revealed that I was preparing a talk for The Humane Society of the United States. "Oh," said the instructor, "assure Dr. Morris that students in my classes never experiment on any vertebrate animal." Aha, I said to myself, here is a high school biology teacher who knows the policy of the State Board of Education.

Now the BSCS textbooks in the blue, yellow and green versions were not compiled under the constraint of a declaration such as we now have in Connecticut. Begun in 1959, as a remarkable team effort, the first editions of the BSCS versions were studied by two million secondary school pupils. Already available in a third edition, the three versions—each arranged for a different ability level—were not intended to produce a uniform, nationwide curriculum in the biological sciences. Nevertheless, they have virtually achieved this goal. Dr. Arnold B. Grobman was chairman of the original Steering Committee that drew up the BSCS textbooks. Some of you will recall that he appeared for the defense in the East Orange "chicken case." Had New Jersey at that time had a policy similar to Connecticut, the outcome might have been pleasantly different. The teacher could not have allowed a student to perform an experiment with which he himself was not familiar.

It should be conceded that the BSCS textbooks are a major achievement. They are beautifully illustrated; their information has been constantly up-dated; they emphasize the latest biochemical approach to biology; they include some ecology; and, with a few surprising exceptions, they are scrupulously correct from the viewpoint of science. Human reproduction is now discussed and illustrated in the latest green version. These books are a far cry from the Moon and Ritchie texts that were available when I taught biology.

Live animal experiments described in the BSCS textbooks include the use of frogs and chickens, both vertebrates with remarkably developed nervous systems. Teacher Manuals for each version go far beyond the experiments outlined in the texts. Their philosophy seems to be that the able student may wish to exceed even the teacher's command of experiments. Nothing indicates that there would be anything but praise for the Connecticut student who,

a few years back, castrated forty-four pairs of live rats and surgically joined them together to test the flow of injected hormones across the parabolic barrier. The boy got his know-how for this project from the report of a medical team which had performed the identical experiment more than twenty years earlier.

We believe that the wording of the Connecticut policy will be a positive deterrent to this kind of cruel, repetitious and therefore unnecessary experimentation by a boy not yet out of his teens. Should it fail to deter, at least it would enable us to bring such public pressures to bear as would in themselves check any propensity for a public school to support a continuation or repetition of this type of activity.

Much of importance is missing from today's school textbooks in the life sciences. The beauty of nature must be inferred by the student from a study of high quality photographs, but the words "beauty" or "beautiful" must not be used, for it is the stance of science that it makes no value judgments. It is worth noting, however, that on the college campuses there is a growing aversion to the scientist because young people today will not let him escape into a valueless world. The "Great Chain of Being," the oneness of life, is hidden in the illustrated classifications of life forms relegated to the back of the textbooks. Any hints at wonder, awe or mystery are studiously avoided. The impact of these books, unlike the older texts, is that life is no mystery—man has conquered all. There are only the faintest rumblings in the sections on ecology that man may be the biosphere's most dangerous animal.

On this hard diet school children are fed. The new jargon is "discovery" which means to discover by one's self through experimentation what has previously been discovered. Under this new pedagogy, the student goes through a long and tedious process of duplicating what history has already learned. It is little wonder that we find them seeking to perform an increased number of experiments on living animals. What can we do to check this abuse perpetrated on sentient creatures?

One thing, of course, is to find adequate substitutes for the live animal experiment and explore the means for bringing about the favorable reception of these substitutes. The HSUS is working on a project to devise research kits that would introduce the use of models—mathematical and mechanical—computerized instruction, tissue culture studies and gaming techniques as substitutes for live animal experiments. This is in the right direction. It deserves our support and every success.

We should also encourage, through every legitimate means possible, a wider use of plants in experimentation. The obvious scientific reason for the use of plants seems to have escaped many educators. One can produce plants in great numbers, providing statistically significant data totally absent from so many experiments

involving animals. The benefits of such an emphasis would be great. It would give the student a better understanding for the need to quantify his data; it would greatly lower laboratory costs, and it would provide a blessed release for animals that might otherwise be used. After all, the first great principles of genetics came from the study of strains of the sweet pea.

The effort to supply schools and teachers with printed material that suggests guidelines for humane education must continue. I have in mind the manuals of The Kindness Club, such excellent pamphlets as *Animals In The Classroom*, a bibliography prepared by the Ohio Humane Federation, and *Humane Biology Projects* released by the Animal Welfare Institute. But we must be increasingly sophisticated about such publications, for our job is to educate. We should set our best writers, especially those with experience in teaching, at work in crashing the numerous professional journals of the teaching profession. We should remember the words of A. Bronson Alcott: "When introducing educational improvements, great care is required to graduate their introduction to the state of common opinion."

A great opportunity awaits well planned humane education and nature centers. The Connecticut Branch will soon have its own center through the generosity of a devoted humanitarian, Miss Norma Terris. What more natural place to bring together elementary and secondary school teachers, especially teachers from the cities who have little chance to observe animals and plants in their natural environment?

Summer workshops for such teachers in such a setting could have beneficial results in classrooms throughout the country. If invitations to the centers are also extended to student groups, the opportunity to spread the humane message would be even more effective.

As for science fairs — local, state and national — these will be hard nuts to crack, but crack they must, and at the source. An unprecedented campaign is needed to educate the sponsors of these fairs. Here I am convinced that teachers and professional educators can be of real assistance, for many have already questioned the scientific and educational merits of the exhibits and the inordinate amount of time and money which a student may spend on a single project.

Of course, a central culprit in the science fair arena is the National Science Foundation. But here I need not remind you of the kinds of pressures which may be brought, for NFS grants come out of your pockets as taxpayers. Rest assured that the new mania for experimental transplant of organs in rabbits and other animals, brain surgery on mice and even primates such as the spider monkey, recently reported at the International Science Fair in Fort Worth, Texas, would have been greatly diminished had NFS grants for biological projects been withheld from high school students. There is

no victory in the 1969 ruling which prohibited the display of any live animal at the International Fair. Photographs of what preceded the exhibits were testimony enough of the cruelties and suffering involved.

Above all, we must be continually vigilant about what goes on in our schools if we hope to reduce and, even more hopefully, eliminate the abuse of animals in the science classroom. Somehow we must teach children that animals, too, have rights and that they have these rights as against man. Perhaps it is time, if it is not already long overdue, to launch a civil rights campaign in behalf of those who cannot speak for themselves. One thing is certain, as the great scientist Alexander Von Humboldt observed: "Cruelty to animals cannot exist together with true education and true learning."