NEWSLETTER Animal Behavior Society

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1992 ABS ANNUAL MEETING KINGSTON, ONTARIO

The 1992 ABS Annual Meeting will be held at Queen's University, Kingston, Ontario, Canada, June 13-18. Meeting highlights include Keynote Speakers Barrie Frost and Steve Emlen and Fellows' Lectures by Miles Keenleyside and Judy Stamps. A number of symposia and invited paper sessions are planned. W.D. Hamilton, winner of the ABS Distinguished Ethologist award and Kim Sullivan, winner of the Quest award, will be present to receive their plaques. If you need registration materials or more information about the meeting, contact co-hosts Laurene Ratcliffe or Kathy Wynne-Edwards, Dept of Biology, Queen's University, Kingston, Ontario, Canada K7L 3N6. Phone: 613-545-6142 or 613-545-6349. FAX: 613-545-6617. E-mail:(BITNET)WYNNEEDW@QUCDN.

1994 MEETING SITE NEEDED

The ABS Executive Committee is urgently seeking proposals for sites for the 1994 annual meeting as well as other future dates. The 1993 meeting will be held at the University of California at Davis.

ABS RESEARCH GRANTS

The ABS Research Grants Awards Committee, chaired by Member-at-Large Steven Austad, is pleased to announce the winners of this year's awards. The Committee reviewed 59 proposals and awarded eight grants for a total of $6,645 in funds. This 14% funding rate is comparable with that of NSF and means that some very worthy proposals were unable to be funded. We urge all ABS members to do their best to help raise money for research grants in the future.

The eight winners to be congratulated are:
Alexandra L. Basolo, University of California, Santa Barbara. ($895) The influence of sexual selection and predation on a genetic polymorphism with differential sex-limitation.
Nancy L. Buschhaus, Ohio State University. ($753) Proximate mechanisms of multiple mating in female eastern bluebirds.
Reuven Dukas, University of California, Riverside. ($989) Information processing and floral choice behavior in bumblebees.
David S. Guertin, Colorado State University. ($652) Trade-offs between feeding and reproduction in a ball-rolling dung beetle.
Gregory F. Grether, University of California, Davis. ($981) Sexual selection on wing coloration in a rubyspot damselfly.
Colleen Cassady St. Clair, University of Oklahoma ($1,000) Mechanisms of brood reduction in rockhopper penguins.
Theresa L. Singer, University of Georgia. ($475) The use of nest paper hydrocarbons for nest and nestmate recognition in the social wasp *Polistes metricus*.
Reuven Yosef, Ohio State University. ($900) Evaluation of a technique for reversing the population decline of the loggerhead shrike.

The Committee would also like to thank the numerous reviewers who assisted us in evaluating the proposals.

ENDOWMENT FUND CHALLENGE ABS Ethnic Diversity Fund

Chuck Snowdon, Past President
Lee Drickamer, Endowments Committee

A member of the Animal Behavior Society who prefers to remain anonymous has offered to donate $1500 toward an ABS Ethnic Diversity Fund, if the remaining members of the Society will contribute an equal amount of matching funds during 1992. The interest generated by the fund will be used to encourage participation by under-represented ethnic minorities in ABS, defining minorities for this purpose as Native Americans, African Americans, Asian Americans, Hispanic/Latino Americans, citizens of Latin American countries and non-white

citizens of African countries. The funds will be used to help defray the costs of students attending ABS meetings. Should the fund grow, it could be extended to offer a minority research grant or helping to defray the travel costs of African or Latin American researchers who are not students.

This is a great way to start our Endowment Fund, and we are grateful to the donor for setting up this challenge to the rest of us. We hope that there will be little difficulty in reaching the $1500 matching goal during 1992. The amount is less than $0.60 per ABS member. You can make checks payable to the ABS Ethnic Diversity Fund and send them to the ABS Treasurer, Robert Matthews, Dept. of Entomology, University of Georgia, Athens, GA, 30602, USA.

ABS NOMINATIONS FOR 1992 ELECTION OF OFFICERS

The following persons have been nominated for offices. The election ballot will appear in the November, 1992 Newsletter and terms will begin following the annual meeting, 1993.

Second President-elect:

Lee Drickamer	Southern Illinois Univ.
H. Carl Gerhardt	University of Missouri

Secretary:

Susan Foster	University of Arkansas
Kathy Wynne-Edwards	Queen's University

Member-at-Large:

Kim Sullivan	Utah State University
Christine Boake	University of Tennesee

Additional nominations may be made by letter to the Nominating Committee Chair Charles Snowdon, Dept. of Psychology, University of Wisconsin, Madison, WI, 53706, USA. Nominations must be signed by five or more ABS members in good standing (Constitution Article 8, Section 1) and must be received by 15 June 1992. The ballot and brief resumes of the candidates will appear in the August 1992 Newsletter.

ANIMAL BEHAVIOR SOCIETY DIRECTION OF CORRESPONDENCE

ABS Newsletter and general correspondence concerning the Society: Janis Driscoll, Dept. of Psychology, Campus Box 173, University of Colorado at Denver, P.O. Box 173364, Denver, CO 80217-3364, USA. Deadlines are the 15th of the month preceding each Newsletter. Next deadline is July 15, 1992. (FAX 303-556-4861)

Animal Behaviour: manuscripts and editorial matters: Meredith West, Dept. of Psychology, Indiana University, Bloomington, IN 47005.

Change of address, missing or defective issues of *Animal Behaviour:* Robert W. Matthews, Dept. of Entomology, University of Georgia, Athens, GA 30602, USA.

ABS LEGISLATIVE ALERT PHONENET

Irene Pepperberg, Chair
Public Affairs Committee

Many members have asked how they could affect legislative decisions that involve behavioral research. One way to make legislators (and the White House) aware of public support for our research is to telephone the appropriate offices and the White House comment line. At present, few researchers avail themselves of this opportunity, often because they do not know what types of bills exist and when bills are coming up for vote.

In an attempt to help our membership play a more active role, Joanne Oliva-Purdy has offered to establish a "phonenet". The net would work as follows: First, members will let us know by commenting on the following form, the type of legislation in which they are interested (e.g., NSF and NIH appropriation bills, bills concerning conservation issues, etc.). Second, members who are interested in participating will agree, when contacted, to call at least one (although more would be better) legislative office (e.g., the White House, their senators, their congressmen, the sponsor of the bill, or the appropriate committee head) and to call or e-mail two other members. (E-mail would be particiularly quick and easy, as many systems have a FORWARD command.) We will attempt to assign members to one another who are in close geographic proximity to keep phone costs minimal. If there is interest, we could appoint state coordinators to perform the same service for local legislation. Such a national and regional system would provide an efficient network to alert members of our society when their input could affect legislative decisions.

Thanks are due to Jane Brockmann, Deborah Gordon and Joanne Oliva-Purdy for comments, criticisms, and suggestions. Please respond by completing the form on the next page and sending it to: **Joanne Oliva-Purdy, Animal/ Management Service, New York Zoological Society, 185th Street and Southern Blvd., Bronx, NY, 10460, USA.**

LEGISLATIVE ALERT

PHONENET RESPONSE FORM

1. Would you call about bills that are primarily (check all that apply):

_____ Funding appropriations _____ Conservation issues

_____ Animal care/use legislation _____ Other (fill-in below))

_____

_____

_____

2. Do you receive any newsletters or bulletins that provide information on upcoming legislation? If so, what are they, and how might we obtain copies?

_____

_____

3. Would you be willing to serve as part of the national phonenet? If so, provide your name, home and office (lab) addresses, phone numbers, and, if possible, e-mail address. Put a star next to the most reliable method of reaching you. Remember, the net will break down if people are too difficult to reach or have no quick way of receiving and relaying messages.

Name _____

Office Address_____ Phone _____

_____

_____

Home Address _____ Phone _____

_____

_____

E-Mail _____

4. Would you be willing to serve as part of a state phonenet? _____ Yes _____ No

Return the form to:

Joanne Oliva Purdy
Animal/Management Service
New York Zoological Society
185th Street and Southern Blvd.
Bronx, NY, 10460, USA

ABS OFFICERS

President: H. Jane Brockmann, Dept. of Zoology, University of Florida, Gainesville, FL 32611, USA
First President-elect: Gail Michener, Dept. of Biol. Science, University of Lethbridge, Lethbridge, Alberta, T1K 3M4, CANADA.
Second President-elect: Zuleyma Tang-Martinez, Dept. of Biology, University of Missouri, St. Louis, MO 63121, USA.
Past President: Charles Snowdon, Dept. of Psychology, University of Wisconsin, Madison, WI, 53706, USA.
Treasurer: Robert Matthews, Dept. of Entomology, University of Georgia, Athens, GA 30602, USA.
Secretary: Janis Driscoll, Dept. of Psychology, University of Colorado at Denver, Denver, CO 80217-3364, USA.
Program Officer: Lynne Houck, Dept. of Ecology and Evolution, University of Chicago, Chicago, IL, 60637, USA.
Parliamentarian: George Waring, Dept. of Zoology, Southern Illinois University, Carbondale, IL, 62901, USA.
Editor: Meredith West, Dept. of Psychology, Indiana University, Bloomington, IN, 47405, USA.
Members-at-large: Steven Austad, Dept. of Biology, Harvard University, Cambridge, MA, 02138, USA.
Martin Daly, Dept. of Psychology, McMaster University, Hamilton, Ontario, L8S 4K1, CANADA.
Bennett Galef, Dept. of Psychology, McMaster University, Hamilton, Ontario, L8S 4K1, CANADA.
Historian: Donald Dewsbury, Dept. of Psychology, University of Florida, Gainesville, FL, 32611, USA.
Officers-elect: (The following officers will take office at the end of the annual meeting, June 1992.)
Hugh Dingle, Second President-elect
John Byers, Program Officer-elect
Patricia Gowaty, Member-at-large-elect

ABS COMMITTEE CHAIRS

Animal Care Committee:
Joy Mench, Chair (1993)
Career Awards Committee:
Charles Snowdon, Chair (1992)
Education Committee:
Carol Saunders, Chair (1994)
Ethics Committee:
Edward H. Burtt, Jr., Chair (1993)
Film Committee:
Thomas Rambo, Chair (1994)
Issues in Applied Animal Behavior Committee:
Benjamin H. Hart, Chair (1993)
Membership Committee:
Ira Perelle, Chair (1993)
Nominations Committee:
Past President Charles Snowdon (1994)
Past Past President Patrick Colgan (1993)
Past Past Past President John Fentress (1992)
Organization and Bylaws Committee:
George Waring, Chair (1995)
Policy Committee:
David Duvall, Chair (1994)
Public Affairs Committee:
Irene Pepperberg, Chair (1992)
Research Grants Committee:
Steven Austad, Chair (1992)
Endowments Committee:
Lee Drickamer, Chair (1994)
Board of Professional Certification:
John Wright, Chair (1994)

NEWS AND NOTES FROM NSF

Fred Stollnitz
Program Director for Animal Behavior

1. As a result of the recent reorganization of the National Science Foundation, (See ABS Newsletter, Feb., 1992), proposals for research and related activities in behavioral ecology will now be reviewed by the Animal Behavior Program rather than by the Population Biology Program.
2. Target dates for submission of proposals to the Animal Behavior Program will change after the next target date (July 15, 1992). The new target dates will be June 15 and December 15 each year.
3. The Advisory Panel for Animal Learning and Behavior wishes to maintain the highest methodological standards for observational as well as experimental research. Proposals for observational studies of behavior should describe how observers are trained, how interobserver reliability is assessed, and how observer bias is prevented or controlled.
4. The special competition for Basic Research in Conservation and Restoration Biology will continue with a deadline of September 29, 1992 for submission of proposals.

For more information, contact Fred Stollnitz, Internet: fstollni@nsf.gov; BITNET: fstollni@nsf; Phone: 202-357-7949; FAX: 202-357-7846.

USE OF ANIMALS IN RESEARCH QUESTIONNAIRE

Preliminary Results

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Printed in the February 1990 issue (Vol. 35(1)) of the Animal Behavior Society Newsletter was a questionnaire dealing with the use of animals in research. The questionnaire was part of a study designed to evaluate the various positions regarding the use of animals in research. We attempted to

circulate the questionnaire to the membership of several animal research societies (i.e., The American Association for Laboratory Animal Science; American Society of Primatology; Animal Behavior Society) and animal rights/protection organizations (i.e., North Carolina Network for Animals; People for the Ethical Treatment of Animals; The Humane Society of the United States) via their respective newsletters. The Animal Behavior Society was the only organization that chose to circulate the questionnaire. Preliminary results of the survey are presented below.

RESULTS

Approximately 9% of the ABS membership responded to the questionnaire (n=228: 123 males, 105 females). The majority of respondents held faculty/research positions - 56% (81 males, 48 females) while 33% (33 males, 43 females) were enrolled in graduate programs.

Question: "Whose position do you tend to support? Animal Researchers or Animal Rights Activists?"

82.0% (104 males, 83 females) of the ABS respondents chose animal researchers, 9.2% (9 males, 12 females) chose animal rights activists, and the remaining 8.8% (10 males, 10 females) did not make a choice. Of the 9.2% who supported the animal rights position, 80% were currently enrolled in a graduate program.

Question: "What do you consider to be the greatest problem(s) with or facing animal research today?"

Although there was considerable variation among responses, several predominant views emerged; they included: (1) problems from animal rights movements; (2) lack of public awareness/education; (3) increasing expense, over-regulation, unrealistic administrative requirements; (4) indiscriminate use of animals; (5) lack of funding, (6) need for increased ethics and welfare concerns.

The remaining data are presented with respect to the position supported:
(1) respondents who support the animal research position.
(2) respondents who support the animal rights position.
(3) respondents who did not choose a position.

Question: "Do you believe there are certain cases where the use of animals in research is NECESSARY?"

% Responding "Yes"

Position Supported:	1	2	3
Males	100.0%	100.0%	90.0%
Females	98.8%	90.9%	100.0%

Question: "Do you believe there are certain cases where the use of animals in research is UNNECESSARY?"

% Responding "Yes"

Position Supported:	1	2	3
Males	98.1%	100.0%	100.0%
Females	98.8%	100.0%	100.0%

Question: "Do you believe there are certain cases where the physical disruption of animal research is warranted?"

% Responding "Yes"

Position Supported:	1	2	3
Males	10.9%	77.8%	60.0%
Females	7.4%	83.3%	44.4%

Question: "Do you believe ANIMAL RESEARCHERS are presenting accurate information concerning the use of animals in research?"

% Responding "Yes"

Position Supported:	1	2	3
Males	78.0%	12.5%	66.7%
Females	77.8%	18.2%	60.0%

Question: "Do you believe ANIMAL RIGHTS ACTIVISTS are presenting accurate information concerning the use of animals in research?"

% Responding "Yes"

Position Supported:	1	2	3
Males	6.9%	37.5%	14.3%
Females	6.3%	63.6%	20.0%

Question: "Do you believe there should be more effort on the part of animal researchers to educate the general public regarding the use of animals in research?"

% Responding "Yes"

Position Supported:	1	2	3
Males	99.0%	88.9%	88.9%
Females	100.0%	100.0%	100.0%

Question: "Rate each of the following animal uses with regard to its level of acceptability (1 = acceptable, 5 = unacceptable)

% Rating as "ACCEPTABLE"(1)

Pos. Supp.		Med. Res.	Vet. Res.	Prod. Test.	Educ. MD
1	Males	86.4%	79.6%	10.7%	58.3%
	Females	79.5%	77.1%	9.6%	57.8%
2	Males	0.0%	12.5%	0.0%	0.0%
	Females	8.3%	33.3%	0.0%	8.3%
3	Males	55.6%	55.6%	0.0%	33.3%

	Females	22.2%	55.6%	0.0%	0.0%

Pos. Supp.		Educ. DVM	Basic Res.	Field Res.
1	Males	62.1%	76.6%	97.1%
	Females	61.4%	61.4%	95.2%
2	Males	12.5%	0.0%	87.5%
	Females	18.2%	22.2%	83.3%
3	Males	55.6%	75.0%	100.0%
	Females	11.1%	50.0%	100.0%

Question: "Rank in order of acceptance from most (1) to least (6) acceptable." (situations involving animals)

% Ranking as "MOST ACCEPTABLE"(1)

Pos. Supp.		Used in Res.	Sold in Pet Stores	House Pets
1	Males	35.4%	0.0%	28.0%
	Females	20.4%	0.0%	57.6%
2	Males	0.0%	0.0%	85.8%
	Females	0.0%	0.0%	87.5%
3	Males	12.5%	0.0%	50.0%
	Females	25.0%	0.0%	75.0%

Pos. Supp.		Raised for Food	Kept in Zoos	Raised for Fur
1	Males	26.8%	8.8%	1.0%
	Females	13.6%	8.4%	0.0%
2	Males	14.2%	0.0%	0.0%
	Females	0.0%	12.5%	0.0%
3	Males	25.0%	12.5%	0.0%
	Females	0.0%	0.0%	0.0%

We thank the Animal Behavior Society for circulating the questionnaire and the members who took the time to complete and return the questionnaire.

GUIDELINES FOR ANIMAL CARE/USE

The ABS has two sets of guidelines dealing with animal care/use: "Guidelines for the Use of Animals in Research" and "Guidelines for the Use of Animals in Education". Both are reprinted below.

GUIDELINES FOR THE USE OF ANIMALS IN RESEARCH

The use of animals in research raises important ethical issues. Studies in laboratory settings necessarily involve keeping animals in cages. Manipulative procedures and surgery may be necessary to achieve the aims of the research. Observation of free-living animals in their natural habitats may involve disruption, particularly if feeding, capture or marking is involved. While the furthering of scientific knowledge is a proper aim, and may itself advance an awareness of human responsibility towards animal life, the investigator should always weigh any potential gain in knowledge against the adverse consequences for the animals used as subjects, and also for other animals in the case of field studies.

In order to help their members make what are sometimes difficult ethical judgements, the Association for the Study of Animal Behaviour and the Animal Behavior Society have formed Ethical and Animal Care committees respectively, These committees jointly produced the following guidelines for the use of all those who are planning and conducting studies of animal behaviour. These guideslines will be used by the Editors of *Animal Behaviour*. Submitted papers that appear to violate the spirit of the guidelines will be referred to one of the committees, and the evaluation of the committee will be used by the editor in deciding whether to accept the manuscript.

1. LEGISLATION

Investigators must abide by the spirit as well as the letter of relevant legislation. For those who reside in Great Britain, references to laws designed to protect animals are given in the Universities' Federation for Animal Welfare (U.F.A.W.) handbook (U.F.A.W. 1978). In the U.S.A., both Federal and State legislation may apply; guidance can be obtained from the Code of Federal Regulations (1979) and from the National Research Council (1985). In Canada, guidance can be obtained from the Canadian Council on Animal Care (1980-1984) publications *Guide to the Care and Use of Experimental Animals, Vols. 1, 2.* Workers elsewhere should acquaint themselves with local requirements.

2. CHOICE OF SPECIES

The species chosen for study should be well suited to answer the questions posed. When research involves the use of procedures that are likely to cause *unavoidable* pain or discomfort to the animals, and when alternative species can be used, the research should employ the species which, in the opinion of the researcher and other qualified colleagues, is least likely to suffer. Choosing an appropriate subject usually requires knowledge of a species' natural history as well as its complexity. Knowledge of an animal's previous experience, such as whether or not it has spent a lifetime in captivity, can be of profound importance. Although not usually appropriate in studies of behaviour, alternatives to animal experiments may sometimes be possible (Smyth 1978).

3. NUMBER OF INDIVIDUALS

In laboratory studies or field studies involving manipulations potentially detrimental to the animal or the population, the research should use the smallest number of animals necessary and sufficient to accomplish the research goals. The number of animals used in an experiment can often be dramatically reduced by good experimental design and the use of statistical tests which enable several factors to be examined at one

time. Still (1982) and Hunt (1980) discuss ways of reducing the number of animals used in experiments through alternative designs. Useful reference works are Cox (1958) and Cochran & Cox (1966).

4. PAIN OR DISCOMFORT

If procedures used in research involve pain or discomfort, the investigator must consider whether the knowledge that may be gained justifies the stress and pain inflicted on the animals. In general, researchers are urged to consider the use of alternative procedures before employing techniques that are likely to cause physical or psychological discomfort to the animal. Pain or discomfort, even when unavoidable, should be minimized to the greatest extent possible under the requirements of the experimental design. Attention should be given to proper pre- and post-operative care in order to minimize preparatory stress and residual effects. Unless specifically contraindicated by the experimental design, procedures that are likely to cause pain or discomfort should be performed only on animals that have been adequately anaesthetized. Investigators are encouraged to discuss with colleagues both the scientific value of their research proposals and also possible ethical considerations. Colleagues who are in a different discipline are especially likely to be helpful since they may have perspectives that differ from those of the investigator.

The following more specific points may be of use.

(a) Fieldwork

Observations of free-living animals in their natural habitats may involve disruption, particularly if feeding, capture, or marking is involved. While field studies may further scientific knowledge and advance the awarenesss of human responsibility towards animals life, investigators should always weigh any potential gain in knowledge against the adverse consequences of disruption for the animals used as subjects, and also for other animals and plants in the ecosystem. Two useful sources of information are the books edited by Stonehouse (1980) and Amlaner & Macdonald (1980).

(b) Aggression, Predation, and Intraspecific Killing

The fact that the agent causing harm may be another non-human animal does not free the experimenter from the normal obligations to experimental animals. Huntingford (1984) discusses the ethical issues involved and recommends that, wherever possible, field studies of natural encounters should be used in preference to staged encounters. Where staged encounters are necessary, the use of models or alternative experimental designs should be considered, the number of subjects should be kept to the minimum needed to accomplish the experimental goals, and the experiments should be made as short as possible.

(c) Aversive Stimulation and Deprivation

These procedures may cause pain and distress to animals. To minimize possible suffering of the animal, the investigator should ascertain that there is no alternative way of motivating the animal, and that the levels of deprivation or aversive stimulation used are no higher than necessary to achieve the goals of the experiment. Alternatives to deprivation include the use of highly preferred foods and other rewards which may motivated even satiated animals. Use of minimal levels requires a knowledge of the technical literature in the relevant area: Quantitative studies of aversive stimulation are reviewed by Church (1971) and the behaviour of satiated animals is considered by Morgan (1974). Further comments on reducing distress due to motivational procedures are to be found in Lea (1979) and Moran (1975).

(d) Social Deprivation, Isolation and Crowding

Experimental designs that require keeping animals in over-crowded conditions, or which involve social deprivation or isolation, may be extremely stressful to the animals involved. Since the degree of stress varies considerably with the species, and with the age, sex, reproductive condition and social status of the individuals, the biology of the animals concerned and their previous social experience should be considered, and stressful situations should be avoided as much as possible.

(e) Deleterious Conditions

Studies aimed at inducing deleterious conditions in animals are sometimes performed in order to gain scientific knowledge of value to human problems. However, the humane treatment of research animals in such experiments should still be considered by the investigator. Animals models should be suitable to the problem investigated. Where feasible, studies inducing a deleterious condition in animals should also address the possible treatment, prevention or alleviation of the condition. Furthermore, if the goals of the research allow it, the investigator should consider using *naturally occurring* instances of such conditions in free-living or domesticated populations, as an alternative to *inducing* the deleterious conditions.

5. ENDANGERED SPECIES

Members of endangered or locally rare species should not be collected or manipulated in the wild except as part of a serious attempt at conservation. Information on threatened species can be obtained from the International Union for the Conservation of Nature, Species Conservation Monitoring Unit, 219C Huntingdon Road, Cambridge, CB3 0DL, England. In the U.S.A., rules and regulations pertaining to the Endangered Species Act of 1973 may be found in the Code of Federal Regulations (1973). Lists of endangered species can be obtained by writing to the Office for Endangered Species, U.S. Department of Interior, Fish and Wildlife Service, Washington, D.C. 20240, or to the Committee on the Status of Endangered Wildlife in Canada, Canadian Wildlife Service, Environment Canada, Ontario, K1A 0E7. Investigators working in other countries should familiarize themselves with local information on threatened and endangered species.

6. PROCUREMENT OF ANIMALS

Animals should be obtained only from reliable sources. For workers in the U.K., advice may be obtained from the Laboratory Animal Breeder's Association, Charles River (U.K.) Ltd, Manston Research Centre, Manston Road, Margate, Kent CT9 4LP. In the U.S.A., information on licensed animal dealers can be obtained from the local office of the U.S. Department of Agriculture (U.S.D.A.).

As far as is possible, the investigator should ensure that those responsible for handling the animals en route to the research facilities provide adequate food, water, ventilation and space, and do not impose undue stress. If animals are captured or killed in the wild, this should be done in as painless and humane a manner as possible.

7. HOUSING AND ANIMAL CARE

The experimenter's responsibilities extend also to the conditions under which the animals are kept when not in use. Caging conditions and husbandry practices must meet, at the very least, minimal recommended requirements. Guidance can be obtained from the U.F.A.W. (1978) handbook, from the National Research Council (1985) guide, and from the Canadian Council on Animal Care's (1980-1984) *Guide to the Care and Use of Experimental Animals*.

Although these publications provide general guidelines that can be applied to wild animals, special attention may be required to enhance the comfort and safety of wild species. Normal maintenance should incorporate, as much as possible, aspects of the natural living conditions deemed important to the welfare and survival of the animals. Consideration should be given to providing features such as natural materials, refuges, perches, and dust and water baths. Frequency of cage cleaning should represent a compromise between the level of cleanliness necessary to prevent disease and the amount of stress imposed by frequent handling and exposure to unfamiliar surroundings, odours and bedding.

8. FINAL DISPOSITION OF ANIMALS

Whenever practical or feasible, researchers should attempt to distribute their animals to colleagues for further study. However, if animals are distributed for use in additional experiments, care should be taken that the same animals are not used repeatedly in experiments which involve invasive surgical procedures or other treatments that are likely to be stressful or painful. Except as prohibited by national, federal, state, provincial, or local laws, researchers may release field-trapped animals if this is practical and feasible, and if it is critical to conservation efforts. However, the researcher should consider that releases into the wild may be injurious or detrimental to existing populations in the area, and animals should be released only at the same site where they were trapped (unless conservation efforts dictate otherwise) and only when their ability to survive in nature has not been impaired, and when they do not constitute a health or ecological hazard to existing populations. If animals must be destroyed subsequent to a study, this should be done in as humane and painless a way as possible; death of the animals should be confirmed before their bodies are discarded.

These guidelines supplement but do not supersede the legal requirements in the country and/or state or province in which the work is carried out. They should not be considered an imposition upon the scientific freedom of individual researchers, but rather as helping to provide an ethical framework to which each investigator may respond in making decisions related to animal welfare.

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GUIDELINES FOR THE USE OF ANIMALS IN EDUCATION

(The following Guidelines were adopted by the ABS Executive Committee at the 1988 annual meeting in Missoula.)

Members of the Animal Behavior Society believe in the intrinsic value of nonhuman animals and in the importance of understanding them. It is therefore appropriate that the Animal Behavior Society has been active in encouraging its members to consider ethical and moral issues in their use of animals in research. It is also appropriate that the Society provide guidance for its members and others in the use of animals for educational purposes.

It is especially important that educators consider ethical and moral aspects of animal use. Many students are concerned about animal welfare and are often alienated from biological and behavioral sciences because of what they perceive as callous and cruel treatment of animals. In addition, the next generation of scientists must be trained to consider animal welfare in planning and conducting research if they are to function in a society which is increasingly concerned with the ethical treatment of animals.

The Animal Behavior Society believes that educators and students should follow ethical and moral principles in studying the behavior of animals in the laboratory and field. There is no completely satisfactory substitute for actual experience in gaining insight into behavior and its variability. We believe it is possible to provide such experience while maintaining the highest possible ethical standards. The following Guidelines are provided as a framework for educators. They are not meant to be the final word nor to restrict the freedom of educators to teach their students in the ways they think best. It is understood that ethical and moral considerations may lead to different solutions in specific situations and cases.

1. The ABS/ASAB Guidelines for the Use of Animals in Research (*Anim. Behav.*, 1986, 34, 315-318) also apply to the use of animals for educational purposes.
2. Educators should be aware of and follow their institution's requirements for review of procedures by an institutional animal care and use committee. Educators are encouraged to seek such review.
3. Students using animals in the laboratory or in field projects should be trained to handle and care for them properly and to recognize indications of pain or stress. Student responsibilities in caring for animals must be clearly defined and explained, and mechanisms for dealing with emergencies provided. Students should not use animals without supervision. Instructors are ultimately responsible for the welfare of all animals used by their students.
4. Students using animals should receive instruction in the ethics of animal use and the value of animal life. They should be encouraged to discuss animal care/use issues. In required courses, students who have ethical reservations about using live animals should be provided with options for completing course work. In optional or elective courses, information on required animal use should be available to students prior to registration.
5. Where first-hand experience with animals is not necessary, educators might consider whether a single classroom demonstration will fulfill educational objectives as effectively as having each student work with an animal. Consideration should also be given to the use of alternative techniques for demonstrating concepts, such as videotapes, films, or computer simulation. Educators might consider whether observation of animals in natural or semi-natural settings can be substituted for laboratory exercises requiring animals.
6. Surgery and other invasive techniques which could cause pain or distress in animals should be restricted to appropriate contexts involving the training of advanced students. Such students should be instructed in proper surgical technique, the use of anesthesia and analgesia, and post-operative care. Again, instructors are ultimately responsible for the welfare of the animals.
7. When students conduct independent or laboratory projects outside of the usual classroom setting, educators are urged to require written proposals. Such proposals could include a description of how animals would be used, what precautions would be taken to ensure their welfare, and why the use of animals is justified for the project. (An excellent example of such a proporsal is provided by Ellen R. Reese, 1987, Guidelines for the humane care and use of animals: proposals for student projects. *Humane Innovations and Alternatives in Animal Experimentation*, 1, 14-18.)

ANNOUNCEMENTS

THE CANARY SINGS!

The Cornell bioacoustics software program **Canary** is complete. Canary provides the ability to easily and rapidly display, edit, and analyze natural sounds. It is an excellent research and teaching tool that operates on Macintosh computers, (LC, SI, II, IIcx, IIfx, and Quadra.).

Some of Canary's features include:

* multi-window displays
* signal editing
* acoustic feature measurement
* data logging
* waveform correlation
* spectrogram correlation
* batch processing

If you are interested in purchasing a copy or have any questions about **Canary**, contact **Christopher W. Clark** at **The Cornell Laboratory of Ornithology, 159 Sapsucker Woods Rd., Ithaca, NY, 14850, USA. Phone: 607-254-2408.**

Announcing the formation of the INTERNATIONAL SOCIETY FOR ANTHROZOOLOGY (ISAZ). The International Society for Anthrozoology was formally inaugurated at a meeting held at St. Catherine's College, University of Cambridge, U.K., on 12 April, 1991. The aim of ISAZ is to promote the study of all aspects of human-animal relationships by the

encouragement and publication of research, the holding of meetings, and other activities. Membership is open to all individuals who are, or have been, engaged in academic scientific or scholarly research on any aspect of human-animal relationships. For information, contact **Dr. J.W.S. Bradshaw, Secretary to ISAZ, Companion Animal Behaviour Studies, Dept. of Biology, University of Southampton, Southampton, SO9 3TU, U.K. Phone: 0-703-594254. FAX: 0-703-594269.**

RESEARCHER'S PARADISE: There has never been a greater need to study and preseve tropical ecosystems than the present. Cano Palma Biological Station, located on the Caribbean coast of Costa Rica, is situated in a biological corridor between two national wildlife preserves. This virtually unstudied habitat, combined with that in adjacent Nicaragua constitutes the largest tract of lowland tropical rainforest outside the Amazon basin. Wildlife census studies in the region estimate 120 species of memmals, over 300 species of birds, and more than 100 species of reptiles and amphibians documented to date. There is also a rich array of invertebrate fauna, the extent of which is yet to be ascertained. The station is located on approximately 750 acres bordered on two sides by rivers and on the remaining sides by rainforest. There is accomodation in dormitory-style facilities for 12 people, with showers and toilet facilities available, plenty of potable water, and kerosene illumination. It is anticipated that electricity will be installed early in 1992, with a back-up generator. Cano Palma Biological Station is accessible only by river boat or small plane. It is administered by a Canadian non-profit group. We invite your inquiry. For information, contact **Canadian Organization for Tropical Education and Rainforest Conservation (COTERC), P.O. Box 335, Pickering, Ontario, CANADA, L1V 2R6. Phone: 416-683-2116. FAX: 416-427-1828.**

THE BIOLOGY OF ULTRAVIOLET LIGHT RECEPTION, is a symposium on the program of the 1992 meeting of the American Society of Zoologists in conjunction with the Canadian Society of Zoologists. The symposium will take a multidisciplinary, cross-taxa and integrative approach to all aspects of u.v. and u.v.-polarized light reception. Contact **Harold I. Browman** or **Craig W. Hawryshyn, Dept. of Biology, University of Victoria, P.O. Box 1700, Victoria, B.C., CANADA, V8W 2Y2. Phone: 604-721-7104** or **7142. FAX: 604-721-7120. E-mail: BROWMAN@UVVM. UVIC.CA** or **HAWRYSHY@UVVM.UVIC.**

CA. (See the general announcement on the ASZ meeting under Meetings below.)

ALL NATURAL POGO. Persons interested in comics, Pogo, human, and animal behavior, and the development of natural concepts should see the book, All Natural Pogo, by Norman Hale. For information, contact **Norman F. Hale, 100 Bank St., 2H, New York NY 10014, USA. Phone: 212-243-8616.**

MEETINGS

1993 ABS MEETING. The Animal Behavior Society will hold its 30th meeting at the University of California, Davis, 24-30 July. For information contact **Benjamin Hart, Dept. of Physiology, School of Veterinary Medicine, University of California at Davis, Davis, CA 95616.**

1992 MEETING OF THE AMERICAN SOCIETY OF ZOOLOGISTS with the American Microscopical Society, Animal Behavior Society, The Canadian Society of Zoologists, The Crustacean Society, and the International Association of Astacology will be held at the Hyatt Regency and Four Seasons Hotel, Vancouver, B.C., Canada, December 27-30, 1992. The call for papers will go out in April, 1992 with abstracts due August 3, 1992 for poster or oral papers.

For information, contact the American Society of Zoologists, 104 Sirius Circle, Thousand Oaks, CA, 91360, USA. Phone: 805-492-3585. FAX: 805-492-0370.

JOINT MEETING OF THE INTERNATIONAL SOCIETY FOR APPLIED ETHOLOGY AND THE AMERICAN SOCIETY OF ANIMAL SCIENCE will be held August 8-11, 1992 in Pittsburgh, PA. For information, contact **Harold Gonyou, Dept. of Animal Science, University of Illinois, Urbana, IL, 61801, USA. Phone: 217-333-2118, FAX: 217-244-2871.**

OPPORTUNITIES

EDITOR'S NOTE: Opportunities are published in the next issue of the Newsletter after they are received. However, because of the timing of the Newsletter, it sometimes happens that a position is filled between the time that the Editor receives the advertisement and the time of the next issue of the Newsletter. The Editor apologizes for any inconvenience this may cause, and recommends that interested persons call to determine if a position is still available before making a formal application.

RESEARCH ASSISTANTS needed for field study of hyena behavior. One or more positions are potentially available to participate in an on-going study of dispersal and behavioral development of spotted hyenas in Kenya. Responsibilities will include radio-tracking and extensive behavioral observation of free-living hyenas in and around the Masai Mara National Reserve. Assistants are needed for period of 8-12 months, beginning as early as possible during the summer of 1992. Individual applicants and pairs of close friends or "significant others" will both be carefully considered. Applicants must possess a willingness to live under rough conditions, common sense, a safe driving record, and a high frustration threshold. Coursework in animal behavior or behavioral ecology is desirable. Graduate study is also a possibility. Round-trip transportation from Nairobi to the Mara will be provided, as will coverage of basic living expenses in a small tented field camp. We also hope to be able to pay assistants a small monthly stipend. Send CV, three letters of recommendation, a statement of what you'd like to get out of this experience, and other relevant materials promptly to **Dr. Kay E. Holecamp, P.O. Box 47557, Keekorok Lodge, Nairobi, KENYA.**

PH.D. ($10,000/yr. with tuition waiver) to study the population dynamics and behavior of different subgroups of Utah's mule deer population: Attitudinal migrants, non-migrants, urban deer, and valley deer. Available fall, 1992. If interested, call or send letter of interest and resume to **Dr. John Bissonette (801-750-2511) or Dr. Michael Conover (801-750-2436), Department of Fisheries and Wildlife, Utah State University, Logan, UT, 84322-5210, USA**

RESEARCH ANIMAL SCIENTIST, permanent position, West Lafayette, Indiana. Incumbent will be located in facilities of Purdue University's Animal Sciences Department. Responsible for initiating and developing a research program directed toward understanding the relationships among physiological parameters, animal behavior, and well-being. Research would include identification of internal states of animal cognition/ perception and development of indicators of well-being for food-producing animals. Degree in animal science or related discipline which included at least 20 semester hours in animal science, and professional experience in animal science are required. Ph.D. and knowledge of animal physiology are desirable. Salary Range $38,861 - $54,607 per annum based on qualifications and experience. For position information, contact **Dr. J.R. Wilcox, 317-494-8074.** For the vacancy announcement and application procedures, contact **Beverly Webert, 301-344-1921.** Applications must be marked 2N040 and postmarked by 29 June 1992. Incomplete applications will not be considered.

VOLUNTEER FIELD ASSISTANT NEEDED for population studies of Banner-tailed kangaroo rats in Portal, Arizona from March-May and August-Sept. 1992. The study site is at the foot of the Chiricahua mountains in southeastern Arizona. Field work involves live-trapping of kangaroo rats, and vegetation sampling. Applicants should have a background in Zoology/Biology. There will be no stipend, but food and housing (in Portal) will be provided. Energetic, highly motivated persons will find this a rewarding research experience. Send resume to **Priyanga Amarasekare, Dept. of Biology, Purdue University, West Lafayette, IN, 47907, USA. Phone: 317-494-8128.**

POSTDOCTORAL POSITION available immediately to study the spatial memory abilities of seed caching corvids. Experience in computer programming, statistics, research design, learning theory, and behavioral ecology desired. One year appointment with opportunity to renew for one more year. Send curriculum vitae, brief statement of research interest and goals, and names of three references to **R.P. Balda, Dept. of Biological Sciences, Box 5640, Northern Arizona University, Flagstaff, AZ, 86011, USA.**

FIELD ASSISTANTS are needed to help in a long-term study of the behavior and ecology of pronghorn antelope in Colorado. Any students interested in behavior and evolution are welcome to apply. Primary duties will include behavioral observations and videotaping of focal bucks, and vegetation sampling of territories. Basic observational equipment (binoculars, spotting scope) and patience are required. Housing will be provided and additional funds are pending. To apply, send a letter describing your qualifications and interests and the names, addresses and phone numbers of two references to **Sherwick Min, P.O. Box 144, Kremmling, CO, 80459, USA.** Assistants may apply for summer or fall.

APPLICATION FOR MEMBERSHIP: ANIMAL BEHAVIOR SOCIETY

Name in Full_____ Degrees_____

Address_____

_____ Phone_____ E-Mail _____

Position_____ Institution_____

_____ Member - $36 (US) Receive Animal Behaviour and Newsletter

_____ Student Member - $18 (US) Receive Animal Behaviour and Newsletter

_____ Spouse Member - $15 (US) Receive Newsletter

My student membership is endorsed by (Dept. Head, ABS Member or Fellow)

Name_____ Signature_____

This application should be send with remittance (make check payable to Animal Behavior Society) or include your

Mastercard #_____ or VISA #_____

Expiration Date _____ Card Holder's Signature _____

Send the application to: **Robert W. Matthews, ABS Treasurer**
Dept. of Entomology
University of Georgia
Athens, GA 30602

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J. Driscoll
ABS Secretary
2550 W. 43rd Avenue
Denver, CO 80211-1732

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