



NEWSLETTER

Animal Behavior Society

Vol. 34, No. 2
May, 1989
A quarterly publication

David Chiszar, ABS Secretary
Department of Psychology, University of Colorado, Campus Box 345, Boulder, Colorado, 80309

ABS NOMINATIONS FOR 1988 ELECTION OF OFFICERS

The following have been nominated for offices that begin 16 June 1990.

Second President:

Michael Beecher	Univ of Washington
Gail Michener	Univ of Lethbridge

Secretary:

Janice Driscoll	Univ of Colorado
David Miller	Univ of Connecticut

Member-at-Large:

Martin Daly	McMaster University
Steven Rebach	Univ of Maryland

Additional nominations may be made by letter to the Nominations Committee (c/o Sydney Gauthreaux, Jr., Dept of Zoology, Clemson Univ, Clemson SC 29631). Nominations must be signed by five or more ABS members in good standing (Constitution Article 8 Section 1); they must be received by 1 June 1989. The ballot and brief resumes of the candidates will appear in the August 1989 ABS Newsletter.

ABS NATIONAL CONVENTION, 1989

To be held at Northern Kentucky University, Highland Heights, KY, 11-17 June. See November Newsletter for registration form. Registration materials should be sent to Local Host, Thomas C. Rambo, 1989 Animal Behavior Society Meetings, Dept of Biol Sciences, Northern Kentucky Univ, Highland Heights, KY 41076.

ANIMAL BEHAVIOR SOCIETY DIRECTION OF CORRESPONDENCE

ABS NEWSLETTER & general correspondence to the Society:

David Chiszar, Dept of Psych, Campus Box 345, Univ of Colorado, Boulder CO 80309

ANIMAL BEHAVIOUR--Manuscripts and editorial matters:

Lee Drickamer, Dept of Zoology
Southern Illinois Univ
Carbondale, IL 62901

ANIMAL BEHAVIOUR--Missing, defective, or back issues; change of address:

Robert Matthews, Dept of Entomology
Univ of Georgia, Athens GA 30602

NEWSLETTER

Contributions for the ABS Newsletter are welcome. Deadline for receipt of materials for the August issue is 15 July. Send to D. Chiszar, address above.

ABS OFFICERS

PRESIDENT: John Fentress, Dept Psych and Biol,
Dalhousie Univ, Halifax, Nova Scotia, Canada
B3H 4J1

1st PRESIDENT-ELECT: Patrick Colgan, Biology
Dept., Queen's Univ, Kingston, Ontario, Canada
K7L 3N6

2nd PRESIDENT-ELECT: Charles Snowdon,
Psychology Dept., Univ Wisconsin, Madison WI 53706

PAST-PRESIDENT: Sydney Gauthreaux Jr., Dept
Zool, Clemson Univ, Clemson, SC 29631

SECRETARY: (1987-1990) David Chiszar, Dept
Psych, Campus Box 345, Univ Colorado, Boulder
CO 80309

TREASURER: (1988-1991) Robert Matthews, Dept
Entomology, Univ Georgia, Athens, GA 30602

PROGRAM OFFICER: (1986-1989) Susan Riechert,
Dept Zool, Univ Tennessee, Knoxville, TN 37916

PARLIAMENTARIAN: (1986-1989) Edward Burt,
Jr., Dept Zool, Ohio Wesleyan Univ, Delaware,
Ohio 43015

EDITOR: (1988-1991) Lee Drickamer, Dept Zool,
Southern Illinois Univ, Carbondale, IL 62901

MEMBER-AT-LARGE: (1986-1989) Jan Randall,
Biol Dept, San Francisco State Univ, San Francisco
CA 94132

MEMBER-AT-LARGE: (1987-1990) Julia Chase,
Biol Dept, Barnard College Columbia Univ, New
York, NY 10027

MEMBER-AT-LARGE: (1988-1991) George Barthalmus,
Dept Zool, North Carolina State Univ, Raleigh, NC
27650

❖❖ INVITED FEATURE ❖❖

Editor's Note. I invited Dr. Donald Dewsbury, ABS Historian, to write a piece discussing the contributions of four of our distinguished colleagues who passed away during the last year. I thank Don for responding quickly to this request, and I thank an anonymous reviewer who made constructive suggestions on the original manuscript.

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FOUR GIANTS: *Frank Beach*
Curt Richter
Niko Tinbergen
and *Konrad Lorenz*

BY: Donald Dewsbury, ABS Historian
Dept of Psych, Univ of Florida
Gainesville, FL 32611



The last year has been a tragic one for the field of animal behavior, as we lost four of our most prominent scientists: *Frank A. Beach*, *Curt P. Richter*, *Nikolaas Tinbergen*, and *Konrad Z. Lorenz*.

Frank A Beach was born in Emporia, Kansas on 13 April 1911 and died in Berkeley, CA 15 June 1988. After undergraduate and masters work at Kansas State Teachers' College, Emporia, he received his PhD from the Univ Chicago, where he was influenced by Karl Lashley, Harvey Carr, and L. L. Thurstone. After a year in Lashley's laboratory at Harvard, Beach spent 1936-1946 at the American Museum of Natural History, 1946-1958 at Yale University, and 1958-1988 at the Univ California, Berkeley. Among his honors and awards were membership in the National Academy of Sciences, awards for both Distinguished Scientific Contributions and Distinguished Teaching from the American Psychological Association, and honorary degrees from Williams College, McGill Univ, and the Kansas State Teachers' College. He was in the first group of ABS fellows elected in 1966.

Beach has been called the "Conscience of Comparative Psychology," as he strove to keep the field on course with warnings against such traps as excessive concentration on a few species or research problems and simplistic conceptualizations of the nature-nurture problem. He was critical in the development of the field of behavioral endocrinology, as with his 1948 book "*Hormones and Behavior*." Beach helped to make sexual behavior a topic one could study in the laboratory and about which one could speak in public. With his service in helping edit *Behaviour* and at various conferences, he helped effect the blending of European ethology with North American animal behavior work.

Beach was a hard-headed experimentalist with sensitivities to animals, colleagues, and the written word. I have known few scientists as open to challenges of pet hypotheses as was Frank Beach.



Curt P. Richter was born in Denver, Colorado on 20 February 1894 and died in Baltimore, Maryland, 21 December 1988. He received his BS degree from Harvard in 1917 and his PhD from Johns Hopkins in 1921, working with John B. Watson. Richter spent his entire career at Hopkins, directing

the Laboratory of Psychobiology. Although retired in 1960, he remained active in the same laboratory for many more years. Richter was a member of the National Academy of Sciences and received the Warren Medal from the Society of Experimental Psychologists.

Richter has been called the "Compleat Psychobiologist." He published over 250 papers on a wide range of topics. In his early studies of spontaneous activity, he studied endogenous rhythms, relationships with feeding schedules, and neuroendocrine influences. He did what was probably the first systematic research on biological clocks in mammals. He developed the running wheel and did especially important work on pathologies of biological clocks. Richter is best known for his work on behavioral homeostasis. He showed that animals could make adaptive choices of foodstuffs in response to the changing internal environment. Among his other areas of study were poisoning, poison avoidance, and domestication in Norway rats.

Although he was a physiologically oriented psychobiologist studying rats, Richter was interested in motivated behavior and its adaptive nature in contributing to the survival of the organism through the behavioral regulation of the internal environment. He was a model of dedication, persistence, and the sheer joy that can be found in scientific discovery. How else could one man retain such enthusiasm in one laboratory for 65 years?



Niko Tinbergen was born at The Hague in the Netherlands 15 April 1907 and died in Oxford, England the same day as Curt Richter. Tinbergen did both his undergraduate and graduate work at Leiden University, receiving his PhD in biology in 1932, just before leaving for Greenland to undertake his classic work on snow buntings and red-necked phalaropes. Tinbergen taught at Leiden during 1933-1942. His interaction with Lorenz began in 1936. The Nazis closed the University in 1942, imprisoning Tinbergen and other professors in a hostage camp. He returned to Leiden after the war, but left for Oxford in 1949. There he became a Professor of Animal Behavior and a Fellow of Merton College. In 1973 Tinbergen and Lorenz shared the Nobel Prize for Physiology and Medicine with Karl von Frisch. Tinbergen was a Foreign Associate of the National Academy of Sciences, a Fellow of the Royal Society, London, a recipient of the Award for Distinguished Scientific Contributions from the American Psychological Association, and holder of honorary degrees from the Universities of Edinburgh and Leicester.

Tinbergen's research concerned the behavior of a variety of species in their natural environments. His comparative studies of the social behavior of gulls, work on homing in digger wasps, studies of egg shell removal in gulls, work on the behavior of sticklebacks, and study of autism in human children are among the classics of ethology. Tinbergen was the "curious naturalist," "watching and wondering" in nature. At the same time, however, he had a gift for incisive experiments that would reveal answers to significant questions concerning the control, development, evolution, and function of behavior

occurring under natural conditions. Tinbergen played a critical role in the worldwide spread of the ethological approach; his "The Study of Instinct" was critical in this respect. By moving to an English-speaking country and producing works of both insight and charm, he won many converts to the ethological approach. He was a gifted writer and lecturer.

Niko Tinbergen, the curious naturalist, had a love for the beauty of nature, a gift for the analysis of its complexities, and the ability to communicate to a wide audience of both professionals and non-professionals.



Konrad Z. Lorenz was born 7 November 1903 in Vienna, Austria and died on 27 February 1989 in Albenburg, Austria. After a childhood enriched by the companionship of numerous hand-raised wild and domestic animals, Lorenz studied medicine at the Univ Vienna as his physician-father wished. He received his MD degree in 1928. His interest in behavior and the idea that behavioral studies could be conducted in a manner parallel to studies in comparative anatomy grew during this period. The influence of Oskar Heinroth and C. O. Whitman affected his developing approach. Lorenz added a PhD in zoology at the Univ Munich in 1936. He became a lecturer at the Univ Vienna in 1937 and was called to a chair in philosophy at the Univ Konigsberg in 1939. In 1950 Lorenz went to the newly-established ethological station of the Max Planck Gesellschaft at Buldern; it became the Max Planck Institute for Behavioral Physiology at Seewiesen in Bavaria in 1958. In 1973 he returned to Austria to resume work on greylag geese. He shared the Nobel Prize in 1973.

Lorenz established the foundation of classical ethology. He integrated a close knowledge of animals, a background in anatomy and medicine, and philosophical and psychological influences to develop ethology, as typified in the familiar "hydraulic" model, with fixed action patterns, sign stimuli, action-specific energy, vacuum activities, and the like. His work with such animals as jackdaws, greylag geese and other Anatidae, and various species of fishes is legendary. The general public knows him best for developing research on imprinting; who can forget the many photographs of Lorenz with imprinted birds? He wrote books for both the popular audience (e.g., "King Solomon's Ring," "Man Meets Dog," "On Aggression") and the scientist (e.g., "Evolution and the Modification of Behavior," "The Foundations of Ethology"). His background in philosophy and psychology led to a lifelong interest in more abstract questions, as in "Behind the Mirror."

Lorenz fashioned a systematic approach to animal behavior that avoided vitalism and was both scientifically viable and accessible to broad audiences. His eloquence, photogenicity, and willingness to address a wide range of issues made him the most visible member of the animal behavior community and contributed to the broad acceptance of the ethological approach.

Slow starters take heart. Beach's first year of college produced nine hours of D's and F's; he was "banished" to Antioch College for a year. Richter received a grade of "A" in a course

in insect behavior with Robert Yerkes, "the only A that I ever managed to get during my two years at Harvard, or for that matter, elsewhere." Tinbergen described himself as "a fairly poor student, rather lazy, self-centered, and narrowly interested," yet with an inquiring mind. While studying at the Columbia University Medical School in 1922, Lorenz is said to have spent more time at the New York Aquarium than at lectures.

Beach, Richter, Tinbergen, and Lorenz studied different aspects of animal life from different perspectives using different methods. They had in common an appreciation for the natural lives of animals and the ways in which behavior acts in survival and reproduction. The organism and its relation to the environment provided a focus for each. Each, in his own way, appreciated both the scientific and the aesthetic aspects of nature and made substantial contributions to its study. They will be missed.



OPPORTUNITIES

EDITOR'S NOTE. Opportunities and announcements are published as soon as possible (i.e., in the next issue of the Newsletter). It sometimes happens, however, that a position is filled between the time we receive the advertisement and the time of the next quarterly issue of the Newsletter (i.e., a period of 2-3 months). Accordingly, we apologize for inconveniences this may cause, and we recommend that interested persons precede their formal responses to advertisements with a phone call to ascertain that the position is still available. (If an ad appears in the Newsletter, the editors have received no indication that the position has been filled as of press time.)

ABS RESEARCH GRANT COMPETITION- Pending availability of funds, a third ABS Research Grant Competition will be held with an application deadline of 1 Nov 1989. Full details will be published in the August issue of the ABS Newsletter following the Annual Meeting in June. Application forms and guidelines will be available from Dr. Julia Chase, Dept Biol, Barnard College, Columbia Univ, New York NY 10027.

NEUROBIOLOGIST/NEUROETHOLOGIST- **January, or later, 1990.** Colorado State Univ is soliciting applications and nominations for this position at the assistant professor level. They seek an individual who is conducting research on the cellular and/or molecular basis of behavior. Postdoctoral experience is preferred. The tenure track appointment will be in the Biol Dept; the individual will be expected to participate in the Univ-wide Program in Neuronal Growth and Development. The successful candidate will be expected to maintain an extramurally funded research program, teach an introductory course in biology, and develop a course in his/her specialty. Applications should include a curriculum vitae, selected reprints, brief statement of research plans and teaching interests, and three letters of recommendation. Deadline is 31 July 1989. Search may be continued if a suitable candidate is not found. Applications and nominations should be sent to: Dr. Philip N. Lehner, Chair, Search Committee, Dept Biol, Colorado State

Univ, Fort Collins CO 80523. CSU is an AA/EO Employer.
EO Office: 314 Stu Serv Bldg.

FIELD ASSISTANTS NEEDED- from **Nov-early Dec 1989** for continuing studies on predator-prey interactions between schooling flat-iron herring, *Harengula thrissina* and a suite of associated piscine predators, in the Gulf of California, Baja Mexico. Diving certification necessary, some knowledge of Spanish and prior experience working with fish and/or making behavioral observations preferable. Time will be scheduled for development of independent projects, so beginning graduate students interested in gaining firsthand knowledge of marine field research are especially encouraged to apply. All living and some travel costs, depending on initial location, provided. Send letter of interest and one letter of recommendation to Julia K. Parrish, Biol Dept, UCLA, 405 Hilgard Ave, Los Angeles CA 90024-1606.

POSTDOCTORAL FELLOW IN ANIMAL BEHAVIOR- **Fall 1989**, with interest in experimental study of behavioral development (attachment, learning, perception, intersensory integration, malleability) in precocial birds. Send CV, reprints, and names of three references to: Prof. Gilbert Gottlieb, Psych Dept, Univ North Carolina at Greensboro, Greensboro, NC 27412. EO/AEE.

LIMITED SCHOLARSHIPS- available for students and teachers through the University Research Expeditions Program which encourages public participation in and helps fund univ research in all disciplines. For a free catalog of field opportunities write or call: Desk DPI, Univ Research Expeditions Program, Univ Calif, Berkeley CA 94720. Phone: (415) 642-6586.

STONE LAB- offers classroom, laboratory and field experiences - **Summer 1989**. Located on Gibraltar Island at Put-in-Bay, Ohio, Stone Lab, administered by the College of Biol Sciences, operated by The Ohio State Univ, is the oldest freshwater biological field station in the United States. It has provided research opportunities in the aquatic, terrestrial and island sciences since 1895, and has become a resource for students throughout Ohio. Students from any State-assisted institution in Ohio can enroll for credit hours at Stone Lab directly through their home institution. One-week courses are scheduled for June 11-June 17; two-and-a-half-week courses are scheduled for June 19-July 5 and July 6-July 22. Five-week courses are scheduled for June 19-July 21 and July 24-August 25. Courses offered over 1-wk and 2 1/2-wks meet six days a week while 5-wk courses meet three times a week on alternate days. For more information, contact the Columbus Stone Lab Office at The Ohio State Univ, 1314 Kinnear Road, Columbus OH 43212, or Phone: (614) 292-8949.

OPPORTUNITIES FOR FIELD COURSES- **Summer 1989-** offered at Biological Field Stations are summarized in a poster prepared by the Organization of Biological Field Stations. Most offerings are intended for undergraduate and graduate students in Biology. For a copy, contact: Dr. Richard W. Coles, Secretary OBFS, Washington Univ Tyson Research Center, P.O.Box 351, Eureka MO 63025.

RESEARCH ASSISTANTSHIP POSITIONS- **Fall Semester 1989** for Masters' and PhD students for fish and wildlife related research through the new Arkansas Cooperative Research Unit at the Univ Arkansas-Fayetteville. Potential projects include research on fish behavior and population dynamics, habitat useage patterns of aquatic and terrestrial organisms, predator/prey dynamics, wetland/waterfowl ecology, nesting ecology, fisheries and wildlife management, and non-game and endangered species research. Interested parties should contact either Dr. James Johnson, Unit Leader, Dr. Cynthia Annett, Asst Unit Leader-Fisheries, or Dr. Thomas Martin, Asst Unit Leader-Wildlife, Arkansas Cooperative Fish and Wildlife Research Unit, Dept Zool, Univ Arkansas, Fayetteville AR 72701. Phone: (501) 575-6709.

NATIONAL ZOOLOGICAL PARK OFFERS RESEARCH DEVELOPMENT AWARDS- for scientists to complete a major piece of work in their speciality, and to gain experience in research opportunities specific to zoological parks, particularly in the areas of evolutionary biol, animal behav, physiol zool, ecology, sociobiol, reproductive physiol, conservation biol, and veterinary sciences. Applicants with a distinguished record of research contributions and those whose interests complement the NSP's current professional research staff are preferred.

Each award is for a maximum of 3 yrs; stipends to be commensurate with professional level and experience. Applicants must be at least 3 yrs postdoctorate. Timing and duration of the Fellowships are flexible, but the appointment must be activated within a year of the award and may not exceed a total of 36 months in duration (awards may be divided into several intervals, not less than 6 months each).

Field research is appropriate; however, Fellows are to be primarily based at the NZP to maximize interactions and collaborations with NZP staff. Individuals who have received support from or through the NZP for a significant period during the preceding 5 yrs are ineligible to apply.

Contact: **Dr. Devra G. Kleiman**, Asst Director for Research, National Zoological Park, Washington, DC 20008. Application deadline is 1 July 1989.

EAST AFRICA- "I am looking for a special kind of person--**someone who would enjoy escorting a deluxe wildlife safari to East Africa.** I believe there are such people among your members; educated men and women who would welcome an opportunity to experience a magnificent adventure in East Africa. If I can find such people among your members, they will be rewarded with:

- A complimentary wildlife safari...and
- A generous honorarium for escorting one of our deluxe tours to Kenya or Kenya/Tanzania.

I ask for your help in bringing this message to your members."
WRITE TO: Don Lipp, Director/Safari Operations, Special Interest Tours & Travel, 134 West 26th St (Suite 902), New York City NY 10001. Phone: (212) 645-6260.

PRIMATE RESEARCH- the Education Committee of the American Society of Primatologists has compiled a list of

summer internships and assistantships. The list contains 18 entries, and can be obtained from Dr. R. J. Hutz, Dept Biol Sciences, Univ Wisconsin, P.O. Box 413, Milwaukee WI 53201.

PRIVATE GRANTS FOR FIELD RESEARCH- In 1990, EARTHWATCH will award grants of \$10,000 to \$100,000 for 110 projects addressing significant questions in the sciences and humanities. The Center for Field Research invites scholars engaged in animal behavior research to apply for awards of funds and volunteer staff. Proposals will be considered from scholars of any nationality, covering any geographical region.

All funds are derived from the contributions of participating volunteers selected from the EARTHWATCH membership; therefore, non-specialist volunteers must be integrated into the research design.

Preliminary proposals can be made by telephone or by a detailed letter to The Center. Upon favorable review, full proposals will be invited to be submitted 12 months before the proposed fielding date of the project.

For further information contact: The Center for Field Research, 680 Mount Auburn St, P.O. Box 403, Watertown MA 02272. Phone: (617) 926-8200. Your inquiry will be directed to the appropriate staff member.

FIELD ASSISTANTS are needed- Fall, Winter and early Spring at the Smithsonian Environmental Research Center to participate in a study of food storing behavior and seed dispersal by gray squirrels. Work includes capturing and marking squirrels, using radio-telemetry to locate and follow individuals, and behavioral observations on free-living and captive squirrels. The Smithsonian will provide a good opportunity to gain research experience, housing at the Center (2700 beautiful acres of hardwood forest and estuary on the Chesapeake Bay), and a stipend. For further details contact: Bill Carmen, Smithsonian Environmental Research Center, P.O.Box 28, Edgewater MD 21037. Phone: (301) 798-4424.

ANNOUNCEMENTS

ANIMAL BEHAVIOR SOCIETY RESEARCH GRANTS 1988-1989 GRANT COMPETITION

The Second ABS Research Grant Competition had 43 applicants requesting \$30,425.46. A total of \$3000.00 was disbursed in seven awards of \$400.00 to \$500.00 each to:

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| J. Balcombe- Zoology, Univ of Tennessee, Knoxville
The role of mother directive calls in Mexican free-tailed bat mother-pup reunions | \$400 |
| S. Cerchio- Moss Landing Marine Laboratories, California
Variation in the song of humpback whales (<i>Megaptera novaeangliae</i>) within a breeding population | \$500 |

- | | |
|--|-------|
| B. J. Hager- Biology, Univ of New Mexico, Albuquerque
Resource allocation among progeny of the Birch Leafminer Sawfly, <i>Fenusa pusilla</i> (Lept.) | \$500 |
| G. Hill- Zoology, Univ of Michigan, Ann Arbor
Female mate preference in relation to male carotenoid pigmentation in the House Finch (<i>Carpodacus mexicanus</i>) | \$400 |
| M. Peacock- Zoology, Arizona State Univ, Tempe
Dispersal versus philopatry in pikas: A cost-benefit analysis | \$400 |
| J. F. Rieger- Zoology, Div of Mammals, Univ of Michigan, Ann Arbor
Female investment strategies and reproductive success in the Uinta ground squirrel, <i>Spermophilus armatus</i> | \$400 |
| E. Tuttle- Biological Sciences, SUNY, Albany
Mate choice in the polymorphic white-throated sparrow, <i>Zonotrichia albicollis</i> | \$400 |

Each application received three reviews, two performed by members of the ABS Research Grant Committee and one by an external reviewer with expertise in the field of study. All funded proposals received a high ranking from all three reviewers. Members of the ABS Research Grant Committee were: G. Barthalmus (North Carolina State Univ), J. Chase (Columbia Univ), W. Holmes (Univ Michigan), D. Mock (Univ Washington), J. Randall (San Francisco State Univ), and O. Young (US Dept Agriculture).

The following served as external reviewers: K. Able, M. C. Baker, G. W. Barlow, J. Baylis, C. Boake, C. R. Brown, N. Burley, G. Burghardt, D. Cheney, P. Colgan, H. Dingle, F. S. Dobson, M. B. Fenton, E. Fischer, P. Gowaty, J. Hafernik, L. Herman, J. Heyning, R. Howard, L. Jacobs, R. Jaeger, A. Kodric-Brown, R. Lein, D. Lott, M. Masters, J. O. Muric, D. Noakes, D. H. Owings, K. Payne, D. Pierson, S. Riechert, D. Rice, S. Rohwer, T. Schwagmeyer, P. Sherman, P. Stacey, B. K. Sullivan, K. Sullivan, R. Warner, P. Waser, K. Yasukawa, M. Zuk.

JONATHAN P. ROOD- 28 May 1937-30 March 1989. Jon received his B.S. degree at the Univ Michigan; his PhD was from Southampton Univ, England. Jon is best known for his field studies on the social behavior and dispersal of mongooses, particularly the dwarf mongoose, which exhibit care giving among unrelated individuals. His comparative study on the behavior of three genera of Argentine cavius was published in *Animal Behaviour Monographs* (1972). Those familiar with Jon and his scientific studies will miss him as a friend and as a valuable contributor to the literature on mammalian social behavior.

PROCEDURE FOR THE INTRODUCTION OF RESOLUTIONS
AT THE ANNUAL BUSINESS MEETING OF ABS

1. Resolutions deal with timely and substantive political and social issues and are transmitted by the ABS to external agencies, organizations, or the general public.
2. Written resolutions should be submitted to the Chair of the Public Affairs Committee 60 days prior to the annual business meeting. Each resolution should provide direction to the President so that it can be acted upon promptly.
3. Timely issues may be submitted up to 24 hours prior to the annual business meeting for evaluation by the Public Affairs Committee.
4. The Public Affairs Committee, as one of its responsibilities, will receive, evaluate, and if necessary, edit submitted resolutions. In the event that editing is necessary, or if the Public Affairs Committee deems the resolution to be inappropriate to the aims of ABS, this decision shall be transmitted to the submitter(s) no later than 15 days prior to the start of the meeting during which the annual business meeting is convened. The initiator(s) of the resolution may appeal, in writing, to the Executive Committee. Final decisions regarding resolutions reached by the Executive Committee during its annual meeting will not be subject to appeal during the interval between the meeting of the Executive Committee and the annual business meeting. The Executive Committee should reach a decision on the appeal within 2 months following the annual meeting.
5. Approved versions of resolutions will be made available to the members during the course of the meeting by being posted on available bulletin boards; hard or projected copies of resolutions will be available for distribution or viewing at the annual business meeting.
6. Approval by a simple majority of members voting at the annual business meeting is required for passage of a resolution.
7. Regardless of the fate of a resolution at the business meeting, a simple majority of those present can approve a mail ballot for the consideration of a resolution by means of the NEWSLETTER.
8. Approval of a resolution at the business meeting or by mail ballot will be followed by prompt action by the President of ABS as directed in the resolution.
9. Approved resolutions will be published in the NEWSLETTER.

Report submitted by George H. Waring, Chair, ABS Public Affairs Committee, Dept of Zool, Southern Illinois Univ, Carbondale, IL 62901.

PROPOSED ANIMAL-WELFARE REGULATIONS- You will recall the special mailing on this topic. In that mailing I believed that Part III (Animal Welfare-Standards; Docket No. 87-004) was open to comment until 14 August 1989. This

date has recently been changed to 13 July 1989. Comments referring to Docket No. 87-004 (see Federal Register, Vol. 54, pp. 10,822-10,954) should be sent by 13 JULY 1989 (original plus 3 copies) to: **Helene R. Wright**, Chief, Regulatory Analysis and Development Staff, PPD, APHIS, USDA, Room 1000, Federal Building, 6505 Belcrest Road, Hyattsville MD 20782.

THE RAINFOREST ALLIANCE- a New York based conservation group, has established a Committee on Conservation and Higher Education. We are a group of educators and other professionals drawn from several universities, the National Audubon Society, and the New York Zoological Society. We believe that matters of environmental quality, the preservation of species diversity, and the conservation of nature raise substantive intellectual issues in the sciences, the social sciences, the arts, and the humanities.

We plan to assemble resource packages useful to college and university instructors in a diversity of disciplines, and hope to publish these as a curriculum guide focusing on conservation issues. Our strategy is to make these curriculum units readily accessible to instructors, thereby encouraging them to include such materials in their courses. In this way we hope to reach students who might otherwise not encounter conservation ideas.

If you have pertinent course syllabi, annotated reading lists and other curriculum materials and are willing to share these with us, please send them to: **Dr. Stephen Karakashian**, 165 W. 91st St, Apt. 16F, New York NY 10024. We would appreciate your alerting colleagues in other disciplines, who may have course materials related to such matters as environmental ethics, man and nature as reflected in the arts and literature, sustainable economic development, and the role of indigenous peoples in conservation.

NATIONAL SCIENCE FOUNDATION
DIVISION OF BEHAVIORAL AND NEURAL SCIENCES
Basic Research in Conservation and Restoration Biology

The National Science Foundation's special competition for basic research in conservation and restoration biology (NSF 89-28) will evaluate and support fundamental research projects aimed at elucidating principles that underlie the conservation and restoration of biological diversity. Appropriate subjects for investigation include naturally occurring ecosystems, communities, species, populations, the genetic, behavioral and physiological processes occurring within them, and human activities affecting them. Proposals may address any level of evolutionary, ecological, behavioral, or physiological analysis, or may seek to integrate across levels or disciplines.

The Division of Behavioral and Neural Sciences (BNS) is participating in this special competition. Research topics that could be considered by BNS programs include, but are not limited to, the following areas:

1. Characterization of environmental requirements for normal daily and seasonal activities, including feeding, migration, and reproduction.

2. Elucidation of the ontogeny of behavioral patterns that are crucial for survival, including finding food, seeking shelter, moving through the habitat, and communicating with conspecifics.
3. Analysis of reproductive behavior and neuroendocrine mechanisms of rare, endangered, or threatened species.
4. Elucidation of deviations from normal behavior or neuroendocrine function as indicators of reproductive state, stress, disease, or environmental perturbation.
5. Documentation of the behavior or neuroendocrinology of wild animals, in order to provide a baseline for assessing the progress of reintroduced and translocated animals.
6. Analysis of how human communities (both traditional and modern) interact with their natural environments, how this interaction varies over long and short-term spans, and the effects of this interaction on culture and society as well as on the physical environment.
7. Characterization of the ecological requirements of our closest relatives, the non-human primates, in terms of habitat, range-size, effect of predation, endemism, and vagility, especially among those species that are endangered or threatened.

Deadline for receipt of proposals at NSF for this special competition is 29 September 1989. Awards will be announced by 1 June 1990. Mark proposal cover sheets with the designation "Conservation Research: NSF 89-28." Guidelines for the preparation of proposals elaborated in "Grants for Research and Education in Science and Engineering" (NSF 83-57, rev. 3/89) must be followed. If you have questions after reading that publication and NSF 89-28, please feel free to ask the appropriate program officer.

Warren G. Kinzey, Program Director
for Physical Anthropology
Phone: (202) 357-7804
BITNET: wkinzey@nsf
Internet: wkinzey@note.nsf.gov

Kathie L. Olsen, Program Director
for Behavioral Neuroendocrinology
Phone: (202) 357-7040
BITNET: kolsen@nsf
Internet: kolsen@note.nsf.gov

Fred Stollnitz, Program Director for Animal
Behavior
Phone: (202) 357-7949
BITNET: fstollni@nsf
Internet: fstollni@note.nsf.gov

John E. Yellen, Program Director for Archaeology
Phone: (202) 357-7804
BITNET: jyellen@nsf
Internet: jyellen@note.nsf.gov

The DIVISION of BIOTIC SYSTEMS and RESOURCES is also participating in this special competition.

The following statements are intended to suggest specific topics for but not to limit the variety of proposals submitted to BSR under the special competition:

1. Clarification of constraints imposed upon the course of evolution by habitat destruction or by restriction of the natural patterns of movement of biota.
2. Characterization and prediction of the dynamics of gene pools of populations that are undergoing or have undergone evolutionary bottlenecks or other marked environmental stresses.
3. Resolution of the taxonomic status and phylogenetic affinities of rare, endangered, or threatened species using appropriate methods of modern systematics.
4. Characterization of the role played by environmentally induced biological responses in determining evolutionary fitness.
5. Understanding changes in population regulation mechanisms induced by habitat alteration, reduction, or fragmentation.
6. Application of modern phylogenetic methods to infer the history and importance of coevolutionary processes in ecological communities.
7. Elucidation of evolutionary processes, biological characteristics, and environmental parameters important to the origin and maintenance of historically rare but persistent species.
8. Analysis of specific regions of unique or remarkable biotic diversity, endemism, evolutionary origin, or barriers to gene flow and study of the processes of evolutionary diversification operating in these regions.
9. Characterization of changes in interspecific relationships induced by environmental degradation.
10. Restoration or reconstruction of native communities and ecosystems to some pre-disturbance baseline condition or some structural and functional equivalent.
11. Establishment of new and persistent biotic assemblages in non-native environments.
12. Rehabilitation of depauperate soils and bodies of water.
13. Integration of sustainable cropping systems and indigenous communities.
14. Determination of optimum spatial parameters for ecological reserves.
15. Theoretical and mathematical modeling studies relevant to any or all of the topics above.

As stated in the original announcement for this competition (NSF 89-28) the following types of proposals are considered to be inappropriate for this special competition:

- Proposals aimed at technologies of germplasm preservation
- Proposals addressing protection, recovery, or restoration of specific organisms, populations, communities, or ecosystems.
- Proposals dealing with mitigation of specific environmental disturbances.
- Proposals that are aimed at veterinary medicine.
- Proposals that require or are based upon support for acquisition of real estate or construction or renovation of facilities.

THE 1989 AIBS COUNCIL AND BOARD MEETING

by Edd Barrows, Delegate to the AIBS

I am pleased to report that I attended a highly informative, excellently choreographed meeting of the AIBS Council on Thursday and Friday, 16 and 17 February 1989. AIBS is alive and undergoing significant adaptive morphological and behavioral ontogeny.

Meeting was called to order on Thursday by President Boyd Strain (botanist, Duke Univ). New President John Patrick Jordan (biochemist, physiologist, USDA) took the gavel and introduced new delegates to AIBS and its new affiliate Societies. Other business included information on the meeting of the Board of Directors and Interim Council Meeting (August 1988), report of the past president, and committee reports.

BioScience has a new section on education and received a first prize in the 1988 Association Trends Publication Contest in the category of Professional Association Magazines.

AIBS has established the *American Foundation for Biological Sciences*. This tax-exempt foundation will build up an endowment that will facilitate crucial long-range planning for the AIBS, Biology, and the Earth.

Past President Herbert Ward reported on Special Sciences Activities of the AIBS. These activities include the organization and management of peer review of basic research proposals by AIBS for organizations such as the Office of Naval Research, National Aeronautics and Space Administration, Dept of Energy, and Agency for International Development, Army Medical Research and Development Command.

In the evening, Paul Erlich (population ecologist, Stanford Univ, AIBS President-Elect) addressed the Washington community about the state of Earth's health. He skewered a famous "imbecile politician" (recently retired, not in the audience I presume) and commented on the lack of properly functioning neurons in the minds of *Homo sapiens politicus*. Regarding research priorities, he suggested that if all human cancers were cured, we would add about 2 years to mean longevity of *H. sapiens united-statesensis*. However, if we can slow our habitability crisis, we could add up to 30 years to our mean longevity, and more importantly, keep our species extant on Earth. In 1932, when Paul was born, human population was 2 billion; it has big-banged to 5.2 billion today. Our glut of humans, coupled with mass transit, is a superior opportunity for evolution of a new, more contagious strain of AIDS virus or an even more virulent disease. Newspapers would serve us wisely if they would carry daily tabular information on Earth's habitability conditions, comparable to their much less important stock market coverage. Further, he suggested that in general, we humans seem to "habituate" to the gradual demise of Mom (or Dad) Earth; our clade seems to have evolved to react preferentially to more rapidly changing situations. This may partially account for our general insensitivity to our environmental degradation.

On Friday, delegates and AIBS officers prepared for and made visits to appropriate committees on Capitol Hill. Paul Risser (ecologist, Univ of New Mexico) reviewed some of the possible effects of global warming on biogeochemical cycles. Robert Peters, II (ecologist, World Wildlife Fund), reviewed some of the possible effects of this warming on organism

distributions, migrations, and extinctions. Michael P. Tittel (House Science, Space & Technology Committee, US Congress) presented some facets of global-warming legislation.

Led by Paul Opler (US Fish and Wildlife Service), my group visited with Charles Moore (Counsel, Committee on Merchant Marine & Fisheries, US House) and Judith Greenwald (Professional Staff Member, Subcommittee on Energy & Power, Committee on Energy & Commerce). We introduced ourselves and indicated the scientific societies that we represent. Our interactions included our questions about global warming legislation and our expression of deep concern about this warming and the fate of Dad.

ANIMAL BEHAVIOR RESEARCH SUPPORT:

An Open Letter from John Fentress, President, ABS.

"In a recent telephone conversation, George Barlow (Berkeley) raised an important issue. The issue concerns government (e.g. NSF/NSERC) research support within the area of animal behavior, and what we can do to improve upon the present situation. This issue is linked to public perceptions of animal behavior research.

"The purpose of this note is to solicit any suggestions you might have.

"We are all sensitive to the often poor publicity that animal behavior research has received. Part of this is connected to legitimate concerns about animal welfare. Part can be attributed to difficulties the public often has understanding the reasons for conducting animal behavior research in the first place.

"ABS as an organization has long held the view that animal behavior research must be conducted in a humane as well as scientifically respectable manner. In his recent role as editor of *Animal Behaviour* Chuck Snowdon expended considerable and effective efforts with respect to each of these issues. The excellent symposium on Animal Care organized by Janis Driscoll at last year's ABS meeting in Montana provides further evidence of the society's sensitivity to animal welfare issues. Our Education, Policy and Public Affairs committees continue to explore and share their thoughts about these issues. The quality of scientific papers at the Montana meeting was high.

"Yet, as George noted in our telephone conversation, problems remain. As a collection of scholars, and as a society, we should do much more to communicate with the public. We should, I suspect, also explore better ways to lobby for appropriate levels of research support. Other branches of natural science (e.g. physics, chemistry, molecular biology, neurobiology) are better organized and more effective.

"The proper study of animal behavior deals with the most important processes in the living world, those involved with the adaptive relations between organisms and their worlds. It is through behavior that we define our own worlds. The richness of species diversity, and the quest for common themes of behavioral organization, are essential scientific enterprises that connect positively to numerous areas of animal and human welfare. Yet our message often does not get across.

"Clearly one can talk to the public, talk to the granting agencies, and write letters. Most of us do this as individuals. The question is: "What can ABS as an

organization do that is most appropriate and effective?" Your input is solicited. With your help I shall try to help us organize the next step. Thanks."

THE ETHOLOGICAL SOCIETY OF INDIA- is interested in establishing bilateral relations with other ethology bodies all over the world. They would like to have an exchange of information on annual meetings, exchange of Newsletters, and local collaboration if any ethologist is visiting India. There is an infant society, 17 years old, without any aid from any source, self funding by way of membership fees. Dr. Sridhara is interested in bringing the organization to international exposure and seeks help, guidance and cooperation in this regard. Interested members of ABS should write to: **Dr. (Mrs.) Shakunthala Sridhara**, Secretary, The Univ of Agricultural Sciences, The Ethological Society of India, Dept of Zoology, GKVK Bangalore-560 065 India.

THE HARRY FRANK GUGGENHEIM FOUNDATION, *NEWSLETTER*- is published twice yearly to announce new projects and continuations of ongoing projects in scientific research and scholarly study supported by the Harry Frank Guggenheim Foundation, as part of its program on the causes and consequences of dominance, aggression, and violence. The principal aims of the *Newsletter* are to inform participants in the Foundation's program (and others with related interests) about new directions that are being taken and to foster communication among those with common concerns. Write to the Foundation at: 527 Madison Ave, New York NY 10022-4301. Phone: (212) 644-4901.

BUCKNELL STUDENT NAMED MARSHALL SCHOLAR. Bucknell Univ senior **Sara Bush** was one of 30 students selected internationally to receive the prestigious Marshall Scholarship in 1989. The award entitles her to two years of advanced academic study at a university of her choice in the United Kingdom. An animal behavior major, Bush has chosen the Univ of East Anglia, where she will work with professor Diana Bell to preserve endangered species. Bush spent last summer under Bell's tutelage at the Jersey Wildlife Preservation Trust in the Channel Islands of the United Kingdom.

JERSEY WILDLIFE PRESERVATION TRUST- offers summer courses and training programs at its International Training Center for the Captive Breeding of Endangered Species. Details on the summer course can be obtained from: **Mr. John McNicholas**, Asst Training Officer, Jersey Wildlife Preservation Trust, Les Augres Manor, Trinity, Jersey, Channel Islands, British Isles. Information on the training program can be had from: **Training Program**, Wildlife Preservation Trust International, 34th St and Girard Ave, Philadelphia PA 19104. Phone: (215) 222-3636.

HOST NEEDED FOR 1990 CONFERENCE- ANYONE interested in hosting the 1990 Midwest Regional Animal Behavior Conference please contact **Doris J. Watt**, Dept Biol, Saint Mary's College, Notre Dame IN 46556. Phone: (219) 284-4668 as soon as possible.

MEETINGS

AMERICAN ARACHNOLOGICAL SOCIETY- Annual Meeting will be 20-24 June 1989 at Butler Univ, Indianapolis, IN. For information contact: **Dr. James Berry**, Dept Biol Sciences, Butler Univ, Indianapolis IN 46208. Phone: (307) 283-9344.

FIFTH EUROPEAN ISRA COUNCIL IN HUNGARY- will be held in Szombathely, Hungary, between 25 June (arrival) and 30 June (departure) 1989. The meeting is being organized by the Institute of Psychology of the Hungarian Academy of Sciences and the Hungarian Psychological Society. Deadline for papers and posters is 15 March 1989. Please mail to: The 1989 ISRA European Conference Organizing Committee, H - 1394, Budapest VI., Szondy u. 83-85 Hungary. ISRA member **Borisz Szegal** will be organizing these meetings.

TENTH INTERNATIONAL SYMPOSIUM OF ODONATOLOGY- 6-12 August 1989. Hosted by: Dept Biol Sci, East Tennessee State Univ, Johnson City TN 37614, USA. Contact: **Dan M. Johnson**, above address, for Registration, Abstract, Housing Reservation Forms, and information on travel grants. Phone: 615-929-4359. Deadline for receipt of abstracts and registration fees is 15 March 1989.

INTERNATIONAL CONFERENCE ON HORMONES, BRAIN AND BEHAVIOR- 18-22 August 1989 at the Univ Liège, Belgium under auspice of the European Society for Comparative Physiology and Biochemistry (ESCPB). The program will include about 40 invited lectures but also free communications in the form of posters or oral presentations. Contact: **Dr. Jacques Balthazart**, Laboratoire de Biochimie Générale et Comparée (BatL1), Université de Liège, Belgique. Telephone: 32-41-43 44 41; BITNET: U411301 @ BLIULG11).

THE HUMAN BEHAVIOR AND EVOLUTION SOCIETY FIRST ANNUAL MEETING- 25-27 August 1989, Northwestern Univ, Evanston, IL. The Society has been formed to promote the exchange of ideas and research findings among scientists who are using evolutionary theory to better understand human behavior. Representatives from all disciplines are welcome, including anthropology, artificial intelligence, biology, economics, ethology, law, philosophy, psychology, psychiatry, psychoanalysis and sociology. Studies of animal behavior are recognized as an important component of attempts to better understand human behavior.

Registration Fee is \$40 if received by 1 April; \$50 thereafter. Registration fee is reduced by 50% for students and postdoctoral fellows. All participants must pay the full registration fee, even if attending only part of the meeting. No form is necessary, but please include your address and phone number. Checks should be made out to "The Human Behavior and Evolution Society." Early responses much appreciated to facilitate planning. Registration fees are fully refundable for cancellations **before 1 August**; after that a 50% refund applies.

Please send Registration Fees to:

The Human Behavior & Evolution Society
Northwestern University
1810 Hinman Street, Evanston, IL 60208-1310.
Phone: 312-491-5402.

Abstracts of proposed presentations must be received by 1 April 1989. Decisions on the program will be made by 1 May 1989. Please use top half of 8 1/2" x 11" paper with 1" margins. Please use the first line for the title, the second for the authors, and subsequent lines for their affiliations and mailing address. The abstract should be less than 200 words (not including titles, names, etc.). Abstracts will be considered for both lecture and poster formats, unless a note at the bottom of the abstract page instructs otherwise.

Please send Abstracts to:

Laura Betzig, Ph.D. and Paul Turke, Ph.D.
The University of Michigan
1521 Rackham Bldg., Ann Arbor, MI 48109-1070
Phone: 313-936-2526.

SECOND INTERNATIONAL CONGRESS OF NEUROETHOLOGY- 10-16 September 1989 at the Free University of Berlin (Federal Republic of Germany). For information, write to: **International Congress of Neuroethology**, c/o Professor Dr. R. Menzel, Koenigin Luise strasse 28-30, D-1000 Berlin 33, West Germany.

THE SOCIETE QUEBECOISE POUR L'ETUDE BIOLOGIQUE DU COMPORTEMENT- will hold its annual meeting 27-29 October 1989 at the Université Laval, Ste-Foy, Québec. The meeting will include a special symposium on reproductive strategies. For information write to: **G. Gauthier**, Dépt. Biol, Université Laval, Ste-Foy, Qc, Canada, G1K 7P4.

INTERNATIONAL SOCIETY FOR DEVELOPMENTAL PSYCHOBIOLOGY- will hold its Annual Meeting Thursday-Sunday, 26-29 October 1989 at the Sir Francis Drake Hotel, 450 Powell St, San Francisco, CA. For additional information contact: **Michael Leon**, Conference Coordinator, ISDP, Dept Psychobiol, Univ Calif-Irvine, Irvine CA 92717.

NORTHEAST REGIONAL ANIMAL BEHAVIOR MEETINGS- will be held 10-12 November 1989 at Brown Univ, Providence RI. For more information contact: **Dr. Jonathan Waage**, Box G, Program in Ecology and Evolutionary Biology, Brown Univ, Providence RI 02912

SPECIAL FEATURE

THE MOST INFLUENTIAL BOOKS IN ANIMAL BEHAVIOR - A SURVEY

BY: **Daniel Q. Estep**, Former Chair
ABS Education Committee
Department of Psychology
Univ of Georgia, Athens, GA 30602

BACKGROUND

The Education Committee of the Animal Behavior Society has been compiling book lists in animal behavior for use by students and professionals. These include introductory books, laboratory exercises and recent books. To ensure that certain "classic" books had not been missed, opinions were solicited from the Fellows and Officers of the Animal Behavior Society concerning the most influential books in animal behavior. The objective was to produce lists of the most important books in animal behavior as viewed by these scientists.

METHODS

A survey was constructed that asked each respondent to list books in each of eight categories. The categories correspond to the lists provided below. The survey was sent to all of the active Fellows of the Society as well as all of the elected officers (1985). A total of 62 surveys were sent out; 44% of those were returned. In each category the lists were compiled and are presented below.

For each list the question asked is presented followed by the number of people responding to that question and the total number of books listed. The number to the left of the author indicates the number of respondents recommending that book. The most recommended books are listed first.

CONCLUSIONS

The books recommended spanned a diversity of research interests, conceptual approaches and audience levels. Recent books (since 1975) seemed to predominate, but older classics also were represented. Sociobiology, behavioral ecology and evolutionary approaches to behavior also were strongly represented. Interestingly, some popular books (*King Solomon's Ring*) were considered just as important as highly technical books.

"IDENTIFY THE 10 MOST IMPORTANT BOOKS IN ANIMAL BEHAVIOR"

Responses = 26 Books Listed - 120

- (19) Wilson, E. O. (1975) *Sociobiology. The New Synthesis*. Cambridge, MA: Harvard Univ. Press.
- (15) Tinbergen, N. (1951) *The Study of Instinct*. New York: Oxford Univ. Press.
- (10) Hinde, R. A. (1970) *Animal Behaviour., A Synthesis of Ethology and Comparative Psychology, 2nd Ed.* New York: McGraw-Hill.
- (8) Lorenz, K. S. (1952) *King Solomon's Ring. New Light on Animal Ways*. New York: Crowell Publ. (Trans. M. K. Wilson).
- (6) Darwin, C. R. (1872/1965) *The Expression of the Emotions in Man and Animals*. Chicago: Univ. Chicago Press.
- (6) Dawkins, R. (1976) *The Selfish Gene*. New York: Oxford Univ. Press.

- (5) Krebs, J. R. & Davies, N. B. (Eds.) (1984) *Behavioural Ecology. An Evolutionary Approach*, 2nd Ed. Sunderland, MA: Sinauer Assoc. Press.
- (5) Marler, P. & Hamilton, W. J., III (1966) *Mechanisms of Animal Behavior*. New York: John Wiley & Sons.
- (5) Wittenberger, J. F. (1981) *Animal Social Behavior*. Boston: Duxbury Press.
- (4) Brown, J. L. (1975) *The Evolution of Behavior*. New York: W. W. Norton.
- (4) Dethier, V. G. (1976) *The Hungry Fly. A Physiological Study of the Behavior Associated with Feeding*. Cambridge, MA: Harvard Univ. Press.
- (4) Thorpe, W. H. (1963) *Learning and Instinct in Animals*, Rev. Ed. Cambridge, MA: Harvard Univ. Press
- (4) Tinbergen, N. (1958) *Curious Naturalists*. New York: Basic Books.
- (4) Tinbergen, N. (1961) *The Herring Gull's World*. New York: Basic Books.
- (4) Williams, G. C. (1966) *Adaptation and Natural Selection. A Critique of Some Current Revolutionary Thought*. Princeton, NJ: Princeton Univ. Press
- (3) Alcock, J. (1984) *Animal Behavior. An Evolutionary Approach*. 3rd Ed. Sunderland, MA: Sinauer Assoc., Inc.
- (3) Trivers, R. (1985) *Social Evolution*. Menlo Park, CA: Benjamin/Cummings Publ.
- (3) Wilson, E. O. (1971) *The Insect Societies*. Cambridge, MA: Harvard Univ. Press.
- (3) Wynne-Edwards, V. C. (1962) *Animal Dispersion in Relation to Social Behaviour*. New York: Hafner Publ. Co.
- (2) Eibl-Eibesfeldt, I. (1975) *Ethology. The Biology of Behavior*, 2nd Ed. New York: Holt, Rinehart & Winston (Trans. E. Klinghammer).
- (2) Goodall, J. (1986) *The Chimps of Gombe*. Cambridge, MA: Harvard Univ. Press.
- (2) King's College Sociobiology Group (Eds.) (1982) *Current Problems in Sociobiology*. New York: Cambridge Univ. Pres.
- (2) Lehner, P. N. (1979) *Handbook of Ethological Methods*. New York: Garland STPM Press.
- (2) Lorenz, K. (1966) *On Aggression*. New York: Harcourt, Brace & World. (Trans. M. K. Wilson).
- (2) Lorenz, K. Z. (1981) *The Foundations of Ethology*. New York: Springer-Verlag (Trans. K. Z. Lorenz & R. W. Rickert).
- (2) Maier, N. R. F. & Schneirla, T. C. (1964) *Principles of Animal Psychology*. New York: Dover Publ.
- (2) McFarland, D. (1985) *Animal Behavior. (Psychobiology, Ethology and Evolution)*. Menlo Park, CA: Benjamin/Cummings Publ.
- (2) Schaller, G. B. (1963) *The Mountain Gorilla. Ecology and Behavior*. Chicago: Univ Chicago Press.
- (2) Tinbergen, N. (1972) *The Animal in Its World Explorations of an Ethologist, 1932-1972*. London: Allen & Unwin (2 kVols.)
- (2) von Frisch, K. (1954) *The Dancing Bees. An Account of the Life and Senses of the Honey Bee*. London: Methuen. (Trans. D. Isle & N. Walker).
- (2) von Frisch, K. (1967) *The Dance Language and Orientation of Bees*. Cambridge, MA: Harvard Univ. Press (Trans. L. E. Chadwick).
- (2) von Frisch, K. (1971) *Bees. Their Vision, Chemical Senses, and Language*. (Rev. Ed.). Ithaca, NY: Cornell Univ. Press.
- (1) Allee, W. C. (1931) *Animal Aggregations. A Study in General Sociology*. Chicago: Univ. Chicago Press.
- (1) Allee, W. C. (1958) *The Social Life of Animals Rev. Ed.* Boston: Beacon Press, Inc.
- (1) Allee, W. C., Emerson, A. E., Park, O., Park, T. & Schmidt, K. P. (1949) *Principles of Animal Ecology*. Philadelphia, PA: W. B. Saunders.
- (1) Ardey, R. (1966) *The Territorial Imperative*. New York: Atheneum Publ.
- (1) Aronson, L. R., Tobach, E., Lehrman, D. S. & Rosenblatt, J. S. (Eds.) (1970) *Development and Evolution of Behavior. Essays in Memory of T. C. Schneirla*. San Francisco: W. H. Freeman.
- (1) Barnett, S. A. (1981) *Modern Ethology: The Science of Animal Behavior*. New York: Oxford Univ. Press.
- (1) Bateson, P. P. G. & Hinde, R. A. (Eds.) (1976) *Growing Points in Ethology*. New York: Cambridge Univ. Press.
- (1) Bateson, P. P. G. & Klopfer, P. H. (Eds.) (1973) *Perspectives in Ethology, Vol. 1*. New York: Plenum Press.
- (1) Bateson, P. P. G. & Klopfer, P. H. (Eds.) (1976) *Perspectives in Ethology, Vol. 2*. New York: Plenum Press.
- (1) Bateson, P. P. G. & Klopfer, P. H. (Eds.) (1978) *Perspectives in Ethology, Vol. 3. Social Behavior*. New York: Plenum Press.

- (1) Bateson, P. P. G. & Klopfer, P. H. (Eds.) (1981) *Perspectives in Ethology, Vol. 4. Advantages of Diversity*. New York: Plenum Press.
- (1) Bateson, P. P. G. & Klopfer, P. H. (Eds.) (1982) *Perspectives in Ethology, Vol. 5. Ontogeny*. New York: Plenum Press.
- (1) Bateson, P. P. G. & Klopfer, P. H. (Eds.) (1985) *Perspectives in Ethology, Vol. 6. Mechanisms*. New York: Plenum Press.
- (1) Carter, C. S. (Ed.) (1974) *Hormones and Sexual Behavior*. Stroudsburg, PA: Dowden, Hutchinson & Ross (Benchmark Papers in Behavior, Vol. 1).
- (1) Stokes, A. W. (Ed.) (1974) *Territory*. Stroudsburg, PA: Dowden, Hutchinson & Ross. (Benchmark Papers in Behavior, Vol. 2).
- (1) Schein, M. W. (Ed.) (1975) *Social Hierarchy and Dominance*. Stroudsburg, PA: Dowden, Hutchinson & Ross. (Benchmark Papers in Behavior, Vol. 3).
- (1) Collias, N. E. & Collias, E. C. (Eds.) (1976) *External Construction by Animals*. Stroudsburg, PA: Dowden, Hutchinson & Ross. (Benchmark Papers in Behavior, Vol. 4).
- (1) Hess, E. H. & Petrovich, S. B. (Eds.) (1977) *Imprinting*. Stroudsburg, PA: Dowden, Hutchinson & Ross. (Benchmark Papers in Behavior, Vol. 5).
- (1) Porges, S. W. & Coles, M. G. H. (Eds.) (1976) *Psychophysiology*. Stroudsburg, PA: Dowden, Hutchinson & Ross. (Benchmark Papers in Behavior, Vol. 6).
- (1) Tavolga, W. N. (Ed.) (1976) *Sound Reception in Fishes*. Stroudsburg, PA: Dowden, Hutchinson & Ross. (Benchmark Papers in Behavior, Vol. 7).
- (1) Banks, E. M. (Ed.) (1977) *Vertebrate Social Organization*. Stroudsburg, PA: Dowden, Hutchinson & Ross. (Benchmark Papers in Behavior, Vol. 8).
- (1) Tavolga, W. N. (Ed.) (1977) *Sound Production in Fishes*. Stroudsburg, PA: Dowden, Hutchinson & Ross (Benchmark Papers in Behavior, Vol. 9).
- (1) Müller-Schwarze, D. (Ed.) (1978) *Evolution of Play Behavior*. Stroudsburg, PA: Hutchinson, Ross Publ. (Benchmark Papers in Behavior, Vol. 10).
- (1) Silver, R. (Ed.) (1977) *Parental Behavior in Birds*. Stroudsburg, PA: Hutchinson, Ross Publ. (Benchmark Papers in Behavior, Vol. 11).
- (1) Scott, J. P. (Ed.) (1978) *Critical Periods*. Stroudsburg, PA: Hutchinson, Ross Publ. (Benchmark Papers in Behavior, Vol. 12).
- (1) Satinoff, E. (Ed.) (1980) *Thermoregulation*. Stroudsburg, PA: Hutchinson, Ross Publ. (Benchmark Papers in Behavior, Vol. 13).
- (1) Henderson, R. W. (Ed.) (1982) *Learning in Animals*. Stroudsburg, PA: Hutchinson, Ross Publ. (Benchmark Papers in Behavior, Vol. 14).
- (1) Dewsbury, D. A. (Ed.) (1981) *Mammalian Sexual Behavior. Foundations for Contemporary Research*. Stroudsburg, PA: Hutchinson, Ross Publ. (Benchmark Papers in Behavior, Vol. 15).
- (1) Hursch, J. & McGuire, T. R. (Eds.) (1982) *Behavior-Genetic Analysis*. Stroudsburg, PA: Hutchinson, Ross Publ. (Benchmark Papers in Behavior, Vol. 16).
- (1) Dewsbury, D. A. (Ed.) (1984) *Foundations of Comparative Psychology*. New York: Van Nostrand Reinhold (Benchmark Papers in Behavior, Vol. 17).
- (1) Brozek, J. (Ed.) (1985) *Malnutrition and Human Behavior: Experimental, Clinical and Community Studies*. New York: Van Nostrand Reinhold (Benchmark Papers in Behavior, Vol. 18).
- (1) Burghardt, G. M. (Ed.) (1985) *Foundations of Comparative Ethology*. New York: Van Nostrand Reinhold Co. (Benchmark Papers in Behavior, Vol. 19).
- (1) Craig, J. F. (1981) *Domestic Animal Behavior. Causes and Implications for Animal Care and Management*. Englewood Cliffs, NJ: Prentice-Hall.
- (1) Daly, M. & Wilson, M. (1983) *Sex, Evolution, and Behavior, 2nd Ed.* Boston: Willard Grant Press.
- (1) Darling, F. F. (1964) *A Herd of Red Deer. A Study in Animal Behavior*. New York: Anchor Books.
- (1) Darwin, C. R. (1859/1982) *On the Origin of the Species by Means of Natural Selection, or, the Preservation of Favored Races in the Struggle for Life*. New York: Penguin Books.
- (1) Darwin, C. R. (1871/1981) *The Descent of Man and Selection in Relation to Sex*. Princeton, NJ: Princeton Univ. Press
- (1) Dawkins, R. (1982) *The Extended Phenotype. The Gene as the Unit of Selection*. New York: Oxford Univ. Press.
- (1) Dewsbury, D. A. (1978) *Comparative Animal Behavior*. New York: McGraw-Hill.
- (1) Ehrman, L. & Parsons, P. A. (1976) *The Genetics of Behavior*. Sunderland, MA: Sinauer Assoc.
- (1) Fraenkel, G. S. & Gunn, D. L. (1961) *The Orientation of Animals. Kineses, Taxes and Compass Reactions*. New York: Dover Publ. Inc.

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- (1) Griffin, D. (1984) *Animal Thinking*. Cambridge, MA: Harvard Univ Press.
- (1) Hailman, J. P. (1977) *Optical Signals. Animal Communication and Light*. Bloomington, IN: Indiana Univ Press.
- (1) Herman, L. M. (Ed.) (1980) *Cetacean Behavior. Mechanisms and Functions*. New York: Wiley.
- (1) Hull, C. L. (1943/1966) *Principles of Behavior. An Introduction to Behavior Theory*. New York: Appleton-Century-Crofts.
- (1) Jolly, A. (1966) *Lemur Behavior. A Madagascar Field Study*. Chicago: Univ Chicago Press.
- (1) Jolly, A. (1972) *The Evolution of Primate Social Behavior*. New York: Macmillan Publ.
- (1) Keller, F. S. & Schoenfeld, W. W. (1950) *Principles of Psychology*. New York: Appleton-Century-Crofts.
- (1) Klopfer, P. H. (1973) *Behavioral Aspects of Ecology*. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- (1) Kroodsmas, D. E. & Miller, E. H. (Eds.) (1982) *Acoustic Communication in Birds*. (2 Vols.). New York: Academic Press.
- (1) Kuhn, T. S. (1970) *The Structure of Scientific Revolutions*. Chicago; Univ Chicago Press.
- (1) Lack, D. (1943) *The Life of the Robin*. London: Witherby, Ltd.
- (1) Lepper, M. R. & Greene, D. (Eds.) (1978) *The Hidden Costs of Reward. New Perspectives in the Psychology of Human Motivation*. Hillsdale, NJ: L. Erlbaum Assoc.
- (1) Lewontin, R. C., Rose, S. & Kamin, L. J. (1984) *Not in Our Genes. Biology, Ideology and Human Nature*. New York: Pantheon Books.
- (1) Lindauer, M. (1961) *Communication Among Social Bees*. Cambridge, MA: Harvard Univ Press.
- (1) Loeb, J. (1918) *Forced Movements, Tropisms and Animal Conduct*. Philadelphia, PA: B. Lippincott.
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- (1) Mayr, E. (1963) *Animal Species and Evolution*. Cambridge, MA: Harvard Univ Press.
- (1) Maynard Smith, J. (1978) *The Evolution of Sex*. New York: Cambridge Univ Press.
- (1) McGill, T. E. (Ed.) (1977) *Readings in Animal Behavior*, 3rd Ed. New York: Holt, Rinehart & Winston.
- (1) Mitchell, R. W. & Thompson, N. S. (Eds.) (1985) *Deception: Perspectives on Human and Nonhuman Deceit*. Albany, NY: State Univ New York Press.
- (1) Morgan, C. L. (1896/1973) *Habit and Instinct*. New York: Arno Press.
- (1) Morgan, C. L. (1906) *An Introduction to Comparative Psychology*. 2nd Ed. Rev. New York: C. Scribner's Sons.
- (1) Morris, D. (1967) *The Naked Ape*. New York: McGraw-Hill.
- (1) Murie, A. (1985) *The Wolves of Mount McKinley*. Seattle, WA: Univ Washington Press.
- (1) Oyama, S. (1985) *The Ontogeny of Information. Developmental Systems and Evolution*. New York: Cambridge Univ Press.
- (1) Pfungst, O. (1911/1965) *Clever Hans (The Horse of Mr. von Osten)*. New York: Holt, Rinehart & Winston (Trans. C. L. Rahn, Ed. by R. Rosenthal).
- (1) Rasa, A. (1986) *Mongoose Watch: A Remarkable Woman's Odyssey in the African Taru Desert with the Pygmy Mongoose*. New York: Doubleday Publ.
- (1) Romanes, G. J. (1984) *Mental Evolution in Animals*. New York: D. Appleton Co.
- (1) Savage-Rumbaugh, E. S. (1986) *Ape Language: From Conditioned Response to Symbol*. New York: Columbia Univ Press.
- (1) Schaller, G. B. (1972) *The Serengeti Lion. A Study of Predator-Prey Relations*. Chicago: Univ Chicago Press.
- (1) Schiller, C. H. (Ed. & Trans.) (1957/1976) *Instinctive Behavior: The Development of the Modern Concept*. New York: Intern Univ Press.
- (1) Schusterman, R. J., Thomas, J. A. & Wood, F. G. (Eds.) (1986) *Dolphin Cognition and Behavior. A Comparative Approach*. Hillsdale, NJ: L. Erlbaum Assoc.
- (1) Sebeok, T. A. (Ed.) (1977) *How Animals Communicate*. Bloomington, IN: Indiana Univ Press.
- (1) Seeley, T. D. (1985) *Honeybee Ecology: A Study of Adaptation in Social Life*. Princeton, NJ: Princeton Univ Press.
- (1) Skinner, B. F. (1938) *The Behavior of Organisms*. New York: Appleton-Century-Crofts.
- (1) Skutch, A. F. (1976) *Parent Birds and Their Young*. Austin, TX: Univ Texas Press.

- (1) Sparks, J. (1982) *The Discovery of Animal Behavior*. Boston: Little, Brown & Co.
- (1) Society for Experimental Biology (1950) *Physiological Mechanisms in Animal Behaviour*. New York: Academic Press.
- (1) Van Den Berghe, P. L. (1979) *Human Family Systems: An Evolutionary View*. New York: Elsevier Publ.
- (1) Watson, J. F. (1930/1958) *Behaviorism*. Rev. Ed. Chicago: Univ Chicago Press.
- (1) Watson, J. B. (1967) *Behavior: An Introduction to Comparative Psychology*. New York: Holt, Rinehart & Winston.
- (1) Williams, G. C. (1975) *Sex and Evolution*. Princeton, NJ: Princeton Univ Press.
- (1) Wilson, E. O. (1978) *On Human Nature*. Cambridge, MA: Harvard Univ Press.

"WHAT DO YOU THINK HAS BEEN THE MOST INFLUENTIAL BOOK IN ANIMAL BEHAVIOR IN THE LAST 20 YEARS?"

Responses = 27 Books Listed = 8

- (18) Wilson, E. O. (1975) *Sociobiology. The New Synthesis*. Cambridge, MA: Harvard Univ Press.
- (4) Hinde, R. A. (1970) *Animal Behaviour. A synthesis of Ethology and Comparative Psychology, 2nd Ed.* New York: McGraw-Hill.
- (2) Marler, P. & Hamilton, W. J., III (1966) *Mechanisms of Animal Behavior*. New York: John Wiley & Sons.
- (1) Dawkins, R. (1976) *The Selfish Gene*. New York: Oxford Univ Press.
- (1) Maier, N. R. F. & Schneirla, T. C. (1964) *Principles of Animal Psychology*. New York: Dover Publ.
- (1) Scott, J. P. (1972) *Animal Behavior, 2nd Ed.* Chicago: Univ Chicago Press.
- (1) Thorpe, W. H. (1963) *Learning and Instinct in Animals, Rev. Ed.* Cambridge, MA: Harvard Univ Press.
- (1) Williams, G. C. (1966) *Adaptation and Natural Selection. A Critique of Some Current Evolutionary Thought*. Princeton, NJ: Princeton Univ Press.

CAN YOU RECOMMEND AN INTRODUCTORY BOOK IN YOUR AREA OF SPECIALIZATION?

Responses = 19 Areas = 15 Books Listed = 26

Ethology

- (1) Manning, A. (1979) *An Introduction to Animal Behaviour, 3rd Ed.* Menlo Park, CA: Addison-Wesley Publ.

Behavior Genetics

- (1) Ehrman, L. & Parsons, P. A. (1976) *The Genetics of Behavior*. Sunderland, MA: Sinauer Assoc.

Animal Communication

- (1) Scheok, T. A. (Ed. (1977) *How Animals Communicate*. Bloomington, IN: Indiana Univ Press.

Cognitive Psychology

- (1) Griffin, D. (1984) *Animal Thinking*. Cambridge, MA: Harvard Univ Press.

Function of Color and Associated Behavior

- (1) Owen, D. F. (1982) *Camouflage and Mimicry*. Chicago: Univ Chicago Press.
- (1) Wickler, W. (1968) *Mimicry in Plants and Animals*. New York: McGraw-Hill (Trans. R. D. Martin).

Pheromones

- (1) Vandenbergh, J. G. (Ed.) (1983) *Pheromones and Reproduction in Mammals*. New York: Academic Press.
- (1) Brown, R. E. & MacDonald, D. W. (Eds.) (1985) *Social Odours in Mammals. 2 Vols.* New York: Oxford Univ Press.

Reproductive Behavior

- (1) Bermant, G. & Davidson, J. M. (1974) *Biological Bases of Sexual Behavior*. New York: Harper & Row.

Bird Behavior

- (1) Collias, N. E. & Collias, E. C. (1984) *Nest Building and Bird Behavior*. Princeton, NJ: Princeton Univ Press.

Primate Behavior

- (2) Jolly, A. (1972) *The Evolution of Primate Social Behavior*. New York: Macmillan Publ.
- (1) Jolly, A. (1966) *Lemur Behavior. A Madagascar Field Study*. Chicago: Univ Chicago Press.
- (1) Box, H. O. (1984) *Primate Behaviour and Social Ecology*. New York: Chapman & Hall, Publ.
- (1) Richard, A. F. (1985) *Primates in Nature*. New York: W. R. Freeman
- (1) Kummer, H. (1971) *Primate Societies: Group Techniques of Ecological Adaptation*. Arlington Heights, IL: A.H.H. Publ.

Behavioral Ecology

- (1) Krebs, J. R. & Davies, N. B. (1981) *An Introduction to Behavioural Ecology*. Sunderland, MA: Sinauer Assoc Press.

Mammalian Behavioral Ecology

- (1) Wittenberger, J. F. (1981) *Animal Social Behavior*. Boston: Duxbury Press.

Behavioral Ecology and Development of Marine Animals

- (1) Reese, E. S. & Lighter, F. J. (Eds.) (1978) *Contrasts in Behavior, Adaptations in the Aquatic and Terrestrial Environments*. New York: John Wiley & Sons.
- (1) Rebach, S. & Dunbar, D. W. (Ed.) (1983) *Studies in Adaptation. The Behavior of Higher Crustacea*. New York: John Wiley & Sons.
- (1) Winn, H. E. & Olla, B. L. (Eds.) (1972) *Behavior of Marine Animals. Current Perspectives in Research. Vol. 1. Invertebrates*. New York: Plenum Press.
- (1) Winn, H. E. & Olla, B. L. (Eds.) (1972) *Behavior of Marine Animals. Current Perspectives in Research. Vol. 2. Vertebrates*. New York: Plenum Press.
- (1) Winn, H. E. & Olla, B. L. (Eds.) (1978) *Behavior of Marine Animals. Current Perspectives in Research. Vol 3. Cetaceans*. New York: Plenum Press.
- (1) Berger, J., Olla, B. L. & Winn, H. E. (Eds.) (1980) *Behavior of Marine Animals. Current Perspectives in Research. Vol. 4. Marine Birds*. New York: Plenum Press.

Fish Social Behavior

- (1) Pitcher, T. J. (Ed.) (1986) *The Behavior of Teleost Fishes*. Baltimore, MD: Johns Hopkins Univ Press.

Avian Social Behavior

- (1) Krebs, J. R. & Davies, N. B. (Eds.) (1984) *Behavioural Ecology. An Evolutionary approach, 2nd Ed.* Sunderland, MA: Sinauer Assoc Press.

Arachnid Social Behavior

- (1) Foelix, R. F. (1982) *Biology of Spiders*. Cambridge, MA: Harvard Univ. Press.

"IF YOU COULD RECOMMEND JUST ONE BOOK TO AN UNDERGRADUATE, WHAT WOULD IT BE?"

Responses = 23 Books Listed = 15

- (5) Lorenz, K. Z. (1952) *King Solomon's Ring. New Light on Animal Ways*. New York: Crowell Publ. (Trans. M. K. Wilson).
- (3) Alcock, J. (1984) *Animal Behavior. An Evolutionary Approach, 3rd Ed.* Sunderland, MA: Sinauer Assoc Press.
- (2) Drickamer, L. C. & Vessey, S. H. (1986) *Animal Behavior, Concepts, Processes, and Methods. 2nd Ed.* Boston: Prindle, Weber & Schmidt.
- (2) Manning, A. (1979) *An Introduction to Animal Behavior, 3rd Ed.* Menlo Park, CA: Addison-Wesley Publ.
- (2) McFarland, D. (1985) *Animal Behavior, Psychobiology, Ethology, and Evolution*. Menlo Park, CA: Benjamin/Cummings Publ.

- (1) Dawkins, R. (1976) *The Selfish Gene*. New York: Oxford Univ Press.

- (1) Dewsbury, D. A. (Ed.) (1985) *Leaders in the Study of Animal Behavior. Autobiographical Perspectives*. Lewisburg, PA: Bucknell Univ Press

- (1) Hinde, R. A. (1982) *Ethology, Its Nature and Relations with Other Sciences*. New York: Oxford Univ Press.

- (1) Klopfer, P. H. (1974) *An Introduction to Animal Behavior, Ethology's First Century, 2nd Ed.* Englewood Cliffs, NJ: Prentice-Hall.

- (1) Krebs, J. R. & Davies, N. B. (1981) *An Introduction to Behavioral Ecology*. Sunderland, MA: Sinauer Assoc Press.

- (1) Lawick-Goodall, J. (1971) *In the Shadow of Man*. Boston, MA: Houghton Mifflin

- (1) Tinbergen, N. (1965) *Animal Behavior*. New York: Time-Life Books.

- (1) Tinbergen, N. (1958) *Curious Naturalists*. New York: Basic Books

- (1) Tinbergen, N. (1961) *The Herring Gull's World*. New York: Basic Books.

- (1) Wittenberger, J. F. (1981) *Animal Social Behavior*. Boston: Duxbury Press.

Editors Note: Responses to the following questions will be included in a future issue of the Newsletter, space permitting.

"Introductory Undergraduate Text(s) Used in the Last Five Years"

"If you Could Recommend Just One Book to a Graduate Student, What Would it Be?"

"Introductory Graduate Text(s) Used in the Last Five Years"

"Other Books You Would Like to Recommend"

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