



NEWSLETTER

Animal Behavior Society

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A quarterly publication

Susan A. Foster, Secretary

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RESULTS 1998 ABS ELECTIONS

273 ballots were cast in the 1998 election. This is approximately 9% of the membership.

The following officers were elected:

Second President Elect: Michael D. Beecher

Secretary: Stephen M. Shuster

Member-at-Large: Shelley Adamo

Congratulations to the new officers, and thanks to all who ran for office. The new officers will begin their terms at the end of the annual meeting in June 1999.

All proposed constitutional changes passed.

CALL FOR NOMINATIONS FOR ABS CAREER AWARDS

In recent years, the Animal Behavior Society has made a series of Career Awards. With these awards we recognize scholars in our discipline at various stages of their careers. These awards and their recipients are:

Distinguished Animal Behaviorist- outstanding lifetime achievement in animal behavior. J.P. Scott, W.D. Hamilton, P. Marler, J. Maynard Smith, G. Woolfenden, L. Brower, L.R. Aronson, J.P. Hailman.

Exemplar Award- major long-term contribution. J.A. Stamps, D. Mock, J. Altmann, J. Alcock, D. Dewsbury.

Quest Award- outstanding seminal contribution. K. Sullivan, M. Zuk, J.C. Wingfield, P. Gowaty.

Outstanding New Investigator- outstanding contribution by a new investigator. L.A. Dugatkin, A. Basolo, D.P. Chivers, H.K. Reeve.

To make a nomination: All members of the society are encouraged to prepare and submit nominations for these awards. To aid the Selection Committee and to help codify the procedures involved, the following items must be submitted for a nomination: (1) a letter of nomination indicating the award for which the nominee is being proposed. It should provide details on the reasons the nominee should be considered for that award, (2) a curriculum vitae of the nominee, and (3) additional supporting letters from colleagues solicited by the nominator. These materials should be sent to David Duvall, Chair, Career Awards Committee, Department of Zoology, Oklahoma State University, Stillwater, OK, 74078, USA. E-mail: duvalld@okway.okstate.edu. DEADLINE: Mar. 1, 1999.

RESULTS 1998 U.S.E.C.C. ELECTION

The following members were elected:

Member & Delegate: Lynne D. Houck

Member & Alternate: Jennifer Fewell

Congratulations to the new members and thanks to all who ran for office.

DIRECTION OF CORRESPONDENCE

ABS Newsletter and general correspondence concerning the Society: Susan Foster, Dept. of Biology, Clark University, 950 Main St., Worcester MA, 01610-1477, USA. Deadlines are the 15th of the month preceding each Newsletter. The next deadline is April 15, 1999.

Articles submitted by members of the Society and judged by the Secretary to be appropriate are occasionally published in the ABS newsletter. The publication of such material does not imply endorsement by the ABS of the opinions expressed.

Animal Behavior Society Web Site:

<http://www.cisab.indiana.edu/ABS>

Animal Behaviour: manuscripts and editorial matters: Animal Behavior Office, 2611 East 10th St., Office 170, Indiana University, Bloomington, IN 47408-2603, USA. Phone (812) 856-5541. Fax (812) 856-5542. Email: aboffice@indiana.edu.

Change of Address: missing or defective issues of *Animal Behaviour*: Animal Behavior Office, 2611 East 10th St., Office 170, Indiana University, Bloomington, IN 47408-2603, USA. Phone (812) 856-5541. Fax (812) 856-5542. Email: aboffice@indiana.edu.

ABS OFFICERS

President: Meredith West, Departments of Biology and Psychology, Indiana University, Bloomington, IN, 47405, USA. E-mail: mewest@bio.indiana.edu.

First President-elect: Andrew Sih, Center for Ecology, Evolution and Behavior, University of Kentucky, Lexington, KY, 40506-0225, USA. E-mail: andy@darwin.ceeb.uky.edu.

Second President-elect: Patricia Gowaty, Institute of Ecology, University of Georgia, Athens, GA, 30602-2602, USA. E-mail: gowaty@ecology.uga.edu.

Past President: David Duvall, Dept. of Zoology, Oklahoma State University, Stillwater, OK, 74078, USA. E-mail: duvalld@okway.okstate.edu.

Treasurer: Marlene Zuk, Dept. of Biology, University of California, Riverside, CA, 92521, USA. E-mail: mzuk@citrus.ucr.edu.

Secretary: Susan Foster, Dept. of Biology, Clark University, 950 Main St., Worcester, MA, 01610-1477, USA. E-mail: sfoster@clarku.edu.

Program Officer: Emilia Martins, Department of Biology, University of Oregon, Eugene, OR, 97403, USA. E-mail: emartins@evolution.uoregon.edu.

Parliamentarian: Kimberly Sullivan, Department of Biology, Utah State University, Logan, UT, 84322-5305, USA. E-mail: yejunco@cc.usu.edu.

Editor: Bennett G. Galef, Jr., Dept. of Psychology, McMaster University, Hamilton, ON, L8S 4K1, Canada. E-mail: galef@mcmaster.ca.

Members-at-Large: Ken Yasukawa, Department of Biology, Beloit College, Beloit WI, 53511, USA. E-mail: yasukawa@beloit.edu.

Michelle P. Scott, Dept. of Zoology, University of New Hampshire, Durham, NH, 03824, USA. E-mail: mpps@christa.unh.edu.

James Ha, Regional Primate Research Center, University of Washington, Seattle, WA, 98195-7330, USA. jcha@u.washington.edu.

Historian: Donald Dewsbury, Dept. of Psychology, University of Florida, Gainesville, FL, 32611, USA. E-mail: dewsbury@webb.psych.ufl.edu.

CALL FOR SYMPOSIA FOR THE 2000 ANNUAL MEETING

Symposium proposals for the 2000 annual meeting must be submitted to the Program Officer by May 1, 1999. Proposals may be submitted by e-mail or regular post to Program Officer, Emilia Martins, Department of Biology, University of Oregon, Eugene, OR 97403; e-mail: emartins@evolution.uoregon.edu.

Call for Resolutions

Resolutions which deal with important and timely political or social issues that members wish to submit for the consideration of the ABS membership are requested by 15 May. Submitted resolutions will be voted on at the annual business meeting at Bucknell University. Approved resolutions reflect the views of the Animal Behavior Society membership and are sent to the appropriate external agencies, organizations, or general public. Written resolutions should be sent to Dr. Linda S. Rayor, Chair of the ABS Public Affairs Committee, Dept. of Entomology, Cornell University, Ithaca, NY 14853. E-mail: lsr1@cornell.edu.

ABS AUTHORS

If you have written or edited a book pertinent to animal behavior which was published in 1998 or will have a book coming out in 1999, please send the citation and a brief synopsis of its contents to Dr. Linda Rayor, Dept. of Entomology, Cornell University, Ithaca, NY 14853, lsr1@cornell.edu, Chair of ABS Public Affairs Committee.

**Thank You From
Ira Perelle, Chair
Development Committee**

The Development Committee is taking this opportunity to express our heartfelt gratitude to the members of the Animal Behavior Society listed below who have contributed to our 1998 Grant Awards Fund Drive. These members made it possible for us to more than double the number of Student Grants the Society awarded in 1998. As we all know, our student members are the future of the Society and the more we encourage students in their research, the stronger our society will become. To those Members who generously gave to the Grant Awards Program, please accept the sincere appreciation of the Society and the Development Committee, and my personal thanks.

Elizabeth Adkins-Regan
Kraig Adler
Susan Alberts
John Alcock
Jeanne Altmann
Kenneth B. Armitage
Gwen Brewer
H. Jane Brockman
Margaret Gould Burke
James F. Case
Mark Chappell
Anne B. Clark
Christopher W. Clark
William C. Crow
Shirley L. Davis
Victor H. Denenberg
Hugh Dingle
Lee C. Drickamer
David W. Dunham
Lee Ehrman
William H. Evoy
Roy Fontaine
Masao Fukui
Lee Gass
Steven Gaulin
Sidney A. Gauthreaux
Rob Gendron
John Gibbon
Sylvia Halkin
A.H. Harcourt
Fred Harrington
Joseph Haydock
Ann E. Hedinger
Laurie Hiestand
Stewart H. Hulse
Jodee Hunt
Mark Ikeda
Lucia Jacobs
Robert G. Jaeger

Tom Jenssen
Thomas A. Knoedler
Stan Kuczaj
Michael R. Landauer
Sabine Loew
William J. Loughry
Jeffrey Lucas
Bruce Lyon
Martha A. Mann
Jennifer Mather
Patricia McConnell
Peter Moller
James J. Moore
Seiichi Mori
Arthur A. Myrberg
Masahiko Nakamura
Suzanne Oppenheimer
Robert B. Payne
Jane Phillips-Conroy
Diana Post
F. H. Pough
Daniel Promislow
Jan Randall
Laurene Ratcliffe
Robert E. Ricklefs
Jose G. Rodriguez-Ramirez
Cindy & Paul Sherman
Todd Sinander
Laura Smale
Judy A. Stamps
Kimberly Sullivan
Roger K. R. Thompson
Barbara Turpin
John G. Vandenbergh
Sandra Vehrencamp
Jonathan Waage
Jeffrey Walters
Danielle Waples
Doug and Sue Wartzok
Peter Waser
Brent C. White
Gerald S. Wilkinson
Robert J. Woll
Naida Zucker
Marlene Zuk

**ANIMAL BEHAVIOR SOCIETY
GRADUATE PROGRAM BULLETIN**

The 1996 Animal Behavior Society Graduate Program Bulletin (Canada, Mexico and the United States), prepared by the ABS Education Committee, is once again available. It is on line at the ABS web site: <http://www.cisab.indiana.edu/ABS/Resource/index.html>. Hard copy is also available for \$8.00 from the Central Office (see direction of correspondence).

**TRAVEL AWARDS
INTERNATIONAL ETHOLOGICAL
CONFERENCE, BANGALORE, INDIA
2-9 August**

The U.S. Ethological Conference Committee has received a grant from the NSF for partial support (about \$1000 each) of travel for younger scientists to attend the XXVI IEC meeting. Younger scientists are defined as those who received their Ph.D. degree between 1994 and 1998 or who will complete their degree during 1999. US citizens and foreign scientists working at a US college or university are eligible. Submit the following items to Dr. H. Carl Gerhardt, Division of Biological Sciences, 215 Tucker Hall, University of Missouri, Columbia, MO 65211 to be received no later than 22 February 1999: 7 copies each of (a) a 1-2 page CV; (b) an abstract you are submitting or have submitted to the IEC committee; and (c) two letters of recommendation. Letters are preferably sent separately, but could also be sent by the applicant in sealed envelopes. For those who have not received their Ph.D., the advisor's letter should include the assurance that the degree will be completed during 1999. We hope to notify all applicants of the outcome of their applications well before 1 June 1999. Other questions about this competition should be addressed to Dr. Gerhardt at the address above, by phone (573-882-7219) or e-mail: bioscarl@showmc.missouri.edu.

**Dr. Robert Goy
1924-1998**

Professor of Psychology and Director of the Wisconsin Regional Primate Research Center of the University of Wisconsin, Madison, died January 14, 1999. Bob was a member-at-large of the ABS Executive Committee from 1969-1972.

He did his undergraduate work at the University of Michigan and received his PhD from the University of Chicago in 1953. He worked primarily in hormones and behavior. Together with W. C. Young, Arnold Gerall, and Charles Phoenix, Bob published early research showing the organizing effects of early hormones in guinea pigs. After moving to Wisconsin he emphasized research on hormone-behavior relationships in nonhuman primates.

He was the author of over 200 articles. Bob received the Kenneth Craik Award in Physiological Psychology from Cambridge University and the Distinguished Scientific Contribution Award from the American Psychological Association. He was not only a distinguished scientist, but an outstanding teacher and colleague and a very caring human being.

**William J. Bell
1943-1998**

By Michael Greenfield

William J. Bell, Fellow of the Animal Behavior Society and Professor of Entomology at the University of Kansas, died in his McJannet, Kansas home on 17 October 1998 after a long illness.

Bill earned a B.S. in Biology and Education, from Bridgewater State College, Bridgewater, MA in 1964 and an M.A. in Zoology from the University of Massachusetts - Amherst in 1966. He then moved to the University of Pennsylvania and, under the tutelage of W. Telfer, earned a Ph.D. in 1969 for his seminal work on the roles of juvenile hormone in vitellogenesis. Following a 1-year postdoctoral fellowship under R. Barth at the University of Texas, Bill was appointed Assistant Professor of Entomology at the University of Kansas in 1970, where he remained until his death.

As his career progressed, Bill expanded his research from developmental biology to other aspects of reproductive physiology and behavior as well as chemosensory biology and orientation behavior. His subjects included a diverse array of arthropods, including cockroaches, bees, beetles, flies, moths, and isopods. He published more than 100 papers, wrote two books and edited three. Between 1970 and 1996 Bill Bell trained 8 M.A. and 18 Ph.D. students in his laboratory. In 1986 the University of Kansas recognized these accomplishments by bestowing the Olin Petefish Award for Research in Basic Sciences upon him. The Animal Behavior Society elected him a Fellow at its 1994 annual meeting.

Bill Bell was a wonderful cook, an avid fisherman, and an entertaining and adventurous companion on foreign excursions. His many colleagues, students, and friends remember him fondly and miss him deeply.

**Jocelyn Crane Griffin
1909-1998**

Jocelyn Crane Griffin died at Emerson Hospital on December 16, 1998. She was a native of Saint Louis who spent decades in exotic places studying jumping spiders, praying mantises, butterflies and fiddler crabs. She was the director of the William Beebe Tropical Research Station in Trinidad for many years. Her comparative studies of the claw in fiddler crabs were classic but comprised only part of her extensive knowledge of the group as reflected in her authoritative monograph, *Fiddler Crabs of the World*. She is survived by her husband, Don Griffin.

**A free lunch!? Should you post your
"publishable" articles on the www?**

Bennett G. Galef, Jr.
Executive Editor
Animal Behaviour

Many of you will have received e-mails suggesting that rather than (or in addition to) submitting your papers to traditional journals, you should post them on a web site, thus making your articles, as Stevan Harnad has put it, "available to all of us everywhere at no cost to anyone." Articles have appeared in prestigious journals (Science, Nature, American Scientist, etc.) proposing various ingenious ways to finance electronic journals that would allow everyone to have access to everything for nothing. I do not doubt that some time soon, there will be far less shipping of hard copies of scientific journals around the world. Indeed, electronic versions of many journals (Animal Behaviour among them), are already available by subscription on the web. Both the number of electronic journals and subscriptions to them are likely to increase dramatically over time. There is, however, a great difference between articles freely available on open web sites and electronic journals available by subscription, as Animal Behaviour is currently. If you believe, as do I, that dissemination of peer-reviewed, copy-edited articles, whether paper or electronic, and their permanent archiving is of value, then you need to think twice before posting your "publishable" (i.e. quality) work on open web sites.

Before I became Editor of Animal Behaviour, I would not have believed the cost of providing peer review and copy editing, even when, as is generally the case, executive editors, associate editors, reviewers and authors all labor without pay. Consider the handling of a typical paper at Animal Behaviour. A manuscript arrives in the editorial office, and an acknowledgement of receipt (1) is sent to the author by the managing editor. The managing editor contacts (2) an associate editor who will eventually write the decision letter for the manuscript. The associate editor selects reviewers and communicates their names to the managing editor (3), who then contacts potential reviewers to determine whether they are willing to review the article in question (4, 5, 6). The article is then sent to reviewers who have expressed a willingness to review it (7,8). If the reviewers are late in returning their reviews, they must be contacted by the managing editor and sometimes by an executive or associate editor as well, and occasionally replaced (9,10). Once received, reviews must be collated, and copies of them sent to the associate editor and reviewers by the managing editor (11, 12, 13). A decision letter must be prepared by the associate editor (14), copied to the

managing editor and sent to the author (15). Assuming the manuscript requires revision, it must be returned to the author (16). Receipt of the revision must be acknowledged by the managing editor (17), the revision sent to the associate editor (18), and perhaps, returned to one of the initial reviewers (19) for a second review, which must then be sent to the associate editor handling the manuscript (20). A new decision letter must be sent (21) and, if the manuscript is accepted, it must then be sent to a copy-editor (22) who suggests revisions to the author (23) and finally acknowledges receipt of the final draft (24) which now must be sent to the publisher (25). The publisher sets type and sends galley proofs to the authors (26) and to the office where they are filed pending receipt of corrected galley proofs from the authors (27). Returned, marked galley proofs are copy edited a final time, and then forwarded to the publisher (28).

More than 25 communications to handle a single manuscript, and the process often becomes considerably more complex. Often, there is correspondence with authors on various points; sometimes many potential reviewers will have to be contacted before two are found who will agree to serve as referees; some manuscripts have to go to the Animal Behavior Society Animal Care Committee for ethical review; authors appeal various decisions to the Executive Editor and Editorial Board, etc., etc. Take the above procedure (or any similar one), multiply it by the roughly 700 manuscripts submitted to Animal Behaviour each year, and you can see that there will be unavoidable costs incurred to provide the manpower, postage and information technology necessary simply to manage the 'paper' flow. In fact, in 1997, the Bloomington Central Office of Animal Behaviour spent more than \$140 reviewing each submitted manuscript and more than \$450 reviewing and copy-editing each published manuscript. Because of these costs, until there are in place procedures other than those currently available to finance peer review and copy editing, posting quality articles on a web site for free distribution threatens the survival of peer-reviewed, copy-edited, archived journals. New sources of funding must be arranged before, not after, old sources of funding are abandoned. I have no axe to grind as Executive Editor of a journal. My term at Animal Behaviour will have ended before articles posted on open web sites will have had much impact on the traditional system for funding scientific publications. I do, however, believe that peer review, copy editing and archival permanence are of significant value to the academic community. There is not yet any agreed-upon method to pay for peer review, copy editing, or archiving of articles posted on "free" web sites. Without such financing, free distribution of articles will have costs as well as benefits. One of these costs is likely to be

diminution of the range of peer-reviewed, copy-edited, archival journals currently available to publish your work. Consequently, it is not clear that, today, posting of quality articles on free web sites (whether before or after publication in more traditional venues) is in the best interests of the academic community. Please don't do it. There is, as yet, no free lunch.

OPPORTUNITIES

The Secretary would like to remind you although I try to avoid listing situations that are already filled, the time lag between submission and arrival of the Newsletter can cause this to occur. Please contact those offering the opportunities before applying.

1999 MEMBERSHIP RENEWALS

Renewal / Status forms for 1999 have been mailed to all active and lapsed members with valid addresses on file. If you haven't received yours or your envelope was missing either the renewal form or information form, please contact the central office (aboffice@indiana.edu) or use the Application Renewal form on the back of this newsletter. You may also download a form from the ABS web site at <http://www.cisab.indiana.edu/ABS/Member/index.html>.

MEETINGS

XXVI International Ethological Conference will be held in Bangalore, India, 2-9 August 1999. Bangalore is the garden city of India, and is the fifth largest metropolis of India. It has well-laid gardens, avenues and architecture. The main announcement has been mailed and should have been received by all ABS members. If you did not receive this information or have questions regarding the meeting, contact Dr. (Mrs) Shakunthala Sridhara, Secretary General, XXVI International Ethological Conference, Univ. of Agricultural Sciences, G.K.V.K., Bangalore-560 065, India.

Littlejohn Symposium. Evolutionary Diversification: Insights from Studies of Geographical Variation and Hybrid Zones. To be held at the University of Missouri, Columbia from 19 June (arrival date)-21 June. Invited speakers (20 June): Michael Arnold, Roger Butlin, Dan Howard, Richard Harrison, Carl Gerhardt, Murray Littlejohn, Stanley Rand, Michael Ryan, Michael Ritchie, Kerry Shaw and Jacek Szymura. Contributed papers on 21 June. Abstract deadline: 1 March; Registration deadline (without penalty): 1 May. For further information see: www.missouri.edu/~biosewww/littlejohn or email Carl Gerhardt at bioscarl@showme.missouri.edu.

Field Assistants needed for studies on kin-recognition mechanisms of Belding's ground squirrels. Research will be conducted in the eastern Sierra Nevada, centered at a field station near Mammoth Lakes, CA. Work will include trapping and marking of free-living ground squirrels, as well as behavioral observations throughout the reproductive season. Work will begin in mid-April and continue through June. Previous field experience is desired, but not necessary. Assistants will be provided with room and board. Please contact Jill Mateo by mail (229 Uris Hall, Psychology Department, Cornell University, Ithaca, NY 14853-7601), e-mail (jmm52@cornell.edu) or phone (607-255-3996).

Post-doctoral position: We are seeking a postdoctoral fellow to work on an NSF-funded project on the coevolution of genes and song dialects in the white-crowned sparrow, in collaboration with Doug Nelson (song dialects and learning) and Patty Parker (molecular markers and behavior) at The Ohio State University. The project involves field work along the Oregon and Washington coasts in the Spring, and analysis of genetic variation at microsatellite loci during the rest of the year. Field work involves capturing and bleeding birds, tape-recording songs, and performing playback experiments. There will also be the opportunity to participate in song learning experiments using hand-reared birds. The ideal candidate will have strong interests/experience in animal communication and in molecular methods for the analysis of genetic variation. The 2 1/2 year position will begin in Autumn or Winter of 1999/2000. Starting salary is \$24K including full benefits. The Ph.D. degree is required before the position begins. Please send a letter summarizing research experience along with a curriculum vitae (include the names and addresses (including e-mail) of three references) to: Dr. Douglas A. Nelson, Department of Evolution, Ecology and Organismal Biology, The Ohio State University, 1735 Neil Avenue, Columbus, OH 43210-1293.

Conservation Research Coordinator, Calgary Zoo: Requires a post graduate degree in Biological Sciences (PhD) and/or veterinary medicine with a minimum of two years post doctoral experience. The primary function of the position will be to promote, coordinate, and facilitate scientific research amongst members of the Conservation Operations staff at the zoo. The incumbent will also be responsible for coordinating external research applications and for conducting self driven research. Previous experience in a zoo/wildlife environment would be an asset. It is anticipated that there will be regular publication and presentation of research results in peer reviewed journals and professional meetings. The zoo will provide some financial support for research and it is expected that the position will also be responsible for generating funding with the assistance of other departments of the zoo. Send letter/resumé/references to Lynne Charney, Manager of Human Resources, Calgary Zoo, P.O. Box 3036 Station B, Calgary, AB T2M 4R8, Canada. For further information contact Dr Bob Cooper, Head of Veterinary Services, @403 232-9390 or email: cooperb@calgaryzoo.ab.ca

Tenure track faculty position: The University of Southwestern Louisiana's Institute for Cognitive Science invites applications for a tenure-track faculty appointment at the assistant professor level for a new Ph.D. program. Appointment is anticipated for the Fall of 1999. Applicants must have an earned doctorate in Cognitive Science or a closely related area, as well as demonstrated potential for research excellence. Focus areas of the new program are in cognitive processes, comparative cognition, computational models of mind, cognitive neuroscience, and language and thought. Salary is competitive, depending on experience and qualifications. Applicants should send a letter of application, statement of research interests, curriculum vitae, reprints, and three letters of reference to Dr. Steve Giambone, Institute for Cognitive Science, P.O. Drawer 43772, University of Southwestern Louisiana, Lafayette, Louisiana 70504. Deadline: March 15, 1999. The University is in compliance with Title IX of the Civil Rights Act, Section 504 of the Rehabilitation Act of 1973, and is an Equal Employment Opportunity Affirmative Action Employer.

Research associate position to work in a lab performing small animal surgery. This person will be responsible for carrying out in vivo pharmacology experiments to test candidate drugs. The qualified candidate should have experience in animal handling (mice and rats), injections (sc, iv, ip), bleeding for pharmacokinetic studies, oral gavaging, animal

behavior testings and surgical skills. You should possess a B.S. or M.S. degree in the biological sciences. Our client is a leading biotech firm with research facilities in Westchester, New York and can provide excellent benefits (health insurance, dental, and vision plan, paid vacation and more). A high impact, high profile position with excellent opportunity for advancement. If interested contact: Barry Garcia, DMC; Fax: 609-584-9575; Email: 915613@candseek.com

Volunteers - Approximately 30 volunteer positions are open in 1999 at the American Museum of Natural History's Southwestern Research Station in Portal, Arizona. The volunteer program is run annually and offers students in biological sciences outstanding opportunities to observe and become involved with scientists doing field research. Food and lodging are provided to volunteers in exchange for twenty-four hours per week of routine chores, with the remaining time available for research activities.

The program is open to both undergraduate and graduate students; the latter may pursue their own research projects. Faculty knowing of promising students should alert them to this opportunity for professional experience toward, development of, and evaluation of their career goals.

Volunteers are needed between March 14 and November 1. Appointments are for part of this period, with a minimum appointment of six weeks. Applicants for spring positions (March-May) should submit applications by February 15, summer volunteers (June-August) by April 1, and fall volunteers (September-November) may apply any time.

For applications, write: Dr. Wade C. Sherbrooke, Director, Southwestern Research Station, American Museum of Natural History, Portal, AZ 85632 USA; telephone 520-558-2396; e-mail: swrs@amnh.org.

